

06/01/00

06-02-00

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UTILITY PATENT APPLICATION TRANSMITTAL  
(Only for new nonprovisional applications under 37 CFR 1.53(b))

Docket No. : 39476/RRT/S850  
Inventor(s) : Piers Christian Lingle, Craig Leonard Ogg, Girish Venkat,  
Richard Winslow, and Keith Shoji Kiyohara  
Title : ONLINE VALUE BEARING ITEM PRINTING  
Express Mail Label No. : EL521375245US

JC542 U.S. PTO  
09/585025  
06/01/00

ADDRESS TO: Assistant Commissioner for Patents  
Box Patent Application  
Washington, D.C. 20231

Date: June 1, 2000

1. ☒ FEE TRANSMITTAL FORM (Submit an original, and a duplicate for fee processing).

2. IF A CONTINUING APPLICATION

\_\_\_\_\_ This application is a \_\_\_\_\_ of patent application No. \_\_\_\_\_.

Prior application information: Examiner ; Group Art Unit:

☒ This application claims priority pursuant to 35 U.S.C. §119(e) and 37 CFR §1.78(a)(4), to provisional Application Nos. 60/136,924 (CPH Docket 34670), 60/139,153 (CPH Docket 34669), and 60/160,491 (CPH Docket 35481).

3. APPLICATION COMPRISED OF

Specification

65 Specification, claims and Abstract (total pages)

Drawings

56 Sheets of drawing(s) (FIGS. 1 to 25C)

Declaration and Power of Attorney

\_\_\_\_\_ Newly executed  
☒ No executed declaration  
\_\_\_\_\_ Copy from a prior application (37 CFR 1.63(d))(for continuation and divisional)

4. \_\_\_\_\_ Microfiche Computer Program (Appendix)

5. \_\_\_\_\_ Nucleotide and/or Amino Acid Sequence Submission (if applicable, all necessary)

\_\_\_\_\_ Computer Readable Copy  
\_\_\_\_\_ Paper Copy (identical to computer copy)  
\_\_\_\_\_ Statement verifying identity of above copies

6. ALSO ENCLOSED ARE

\_\_\_\_\_ Preliminary Amendment  
\_\_\_\_\_ A Petition for Extension of Time for the parent application and the required fee are enclosed as separate papers  
\_\_\_\_\_ Small Entity Statement(s)

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**UTILITY PATENT APPLICATION TRANSMITTAL**  
**(Only for new nonprovisional applications under 37 CFR 1.53(b))**

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Docket No.: 39476/RRT/S850

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- ☐ Statement filed in parent application, status still proper and desired  
☐ Copy of Statement filed in provisional application, status still proper and desired  
☐ An Assignment of the invention with the Recordation Cover Sheet and the recordation fee are enclosed as separate papers  
☐ This application is owned by pursuant to an Assignment recorded at Reel , Frame  
☐ Information Disclosure Statement (IDS)/PTO-1449  
☐ Copies of IDS Citations  
☐ Certified copy of Priority Document(s) (*if foreign priority is claimed*)  
☐ English Translation Document (*if applicable*)  
☒ Return Receipt Postcard (MPEP 503) (should be specifically itemized).  
☐ Other

**7. CORRESPONDENCE ADDRESS**

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RRT/dsz

39476/RRT/S850

ONLINE VALUE BEARING ITEM PRINTING

CROSS-REFERENCE TO RELATED APPLICATIONS

This patent application claims the benefit of the filing date of United States Provisional Patent Applications Serial Nos. 60/136,924, filed June 1, 1999 and entitled "INTERNET POSTAGE SYSTEM", 60/139,153, filed June 14, 1999, and entitled "CLIENT SOFTWARE AND USER INTERFACE FOR INTERNET POSTAGE SYSTEM", AND 60/160,491, October 20, 1999, and entitled "SECURE AND RECOVERABLE DATABASE FOR ON-LINE POSTAGE SYSTEM", the entire contents of which are hereby expressly incorporated by reference.

FIELD OF THE INVENTION

The present invention relates to secure printing of value-bearing items (VBI) preferably, postage. More specifically, the invention relates to a graphical user interface (GUI) for printing of VBI in a computer network environment.

BACKGROUND OF THE INVENTION

A significant percentage of the United States Postal Service (USPS) revenue is from metered postage. Metered postage is generated by utilizing postage meters that print a special mark, also known as postal indicia, on mail pieces. Generally, printing postage and any VBI can be carried out by using mechanical meters or computer-based systems.

With respect to computer-based postage processing systems, the USPS under the Information-Based Indicia Program (IBIP) has published specifications for IBIP postage meters that identify a special purpose hardware device, known as a Postal Security Device (PSD) that is generally located at a user's site. The PSD, in conjunction with the user's personal computer and printer, functions as the IBIP postage meter. The USPS has published a number of documents describing the PSD

1 specifications, the indicia specifications and other related and  
relevant information. There are also security standards for  
printing other types of VBI, such as coupons, tickets, gift  
certificates, currency, voucher and the like.

5 A significant drawback of existing hardware-based systems  
is that a new PSD must be locally provided to each new user,  
which involves significant cost. Furthermore, if the additional  
PSD breaks down, service calls must be made to the user location.  
10 In light of the drawbacks in hardware-based postage metering  
systems, a software-based system has been developed that does not  
require specialized hardware for each user. The software-based  
system meets the IBIP specifications for a PSD, using a  
centralized server-based implementation of PSDs utilizing one or  
15 more cryptographic modules. The system also includes a database  
for all users' information. The software-based system, however,  
has brought about new challenges.

The software-based system should be able to handle secure  
communications between users and the database. The system should  
also be user friendly and be able to provide the user with a  
20 step-by-step process for installing the client software,  
registering with the system, printing the postage value,  
maintaining and monitoring the user account information, and the  
like.

25 Therefore, there is a need for a new method and apparatus  
for implementation of VBI printing via a user friendly GUI with  
a variety of selectable options.

#### SUMMARY OF THE INVENTION

30 In accordance with one aspect of the present invention, an  
on-line VBI printing system that includes one or more  
cryptographic modules and a central database has been designed.  
The cryptographic modules serve the function of the PSDs and are  
capable of implementing a variety of required security standards.  
A client system provides a user friendly GUI for facilitating the  
35 interface of the user to the system. The GUI system includes



1 wizards that help the user step-by-step with processes of  
installation, registration, and printing

5 In one aspect, the invention describes an on-line system for  
printing a value bearing item (VBI) that includes a client system  
for interfacing with a user comprising; a GUI for installing  
software for printing the VBI; a GUI for registering the user in  
the system; and a GUI for managing the printing of the VBI; and  
a server system capable of communicating with the client system  
over a computer network for authorizing the client system to  
10 print the VBI.

15 Other features of the present invention include a GUI for  
making changes to the user's information; a GUI for displaying  
the user information including an account information, wherein  
the account information includes an amount of credit left in the  
account; a GUI for specifying an address book so that the system  
can use the address book to print addresses; and a GUI for  
entering a password so that the server system can store the  
entered password and verify the password. In one embodiment, the  
server system includes an address matching module for verifying  
20 an address entered by the user.

25 In another aspect, the invention describes a method for  
printing a value bearing item (VBI) over a computer network  
having a client system and a server system comprising the steps  
of: displaying a first GUI by the client system for registering  
a user with the server system over the computer network;  
establishing communication with the server via the network;  
entering user information in the first GUI; communicating the  
entered user information to the server; displaying a second GUI  
by the client system including printing options for managing the  
30 printing of the VBI; selecting one or more printing options from  
the second GUI; and printing the VBI according to the selected  
one or more printing options.

35 BRIEF DESCRIPTION OF THE DRAWINGS

1       The objects, advantages and features of this invention will  
become more apparent from a consideration of the following  
detailed description and the drawings, in which:

5       FIG. 1 is an exemplary block diagram for the client/server  
architecture of one embodiment of the present invention;

      FIG. 2 is an exemplary block diagram of a remote user  
computer connected to a server via Internet according to one  
embodiment of the present invention;

10       FIG. 3 is an exemplary flow diagram of an installation  
wizard;

      FIG. 4 is an exemplary block diagram of servers, databases,  
and services according to one embodiment of the present  
invention;

15       FIGs. 5A-5B are exemplary interfaces for application  
plugins;

      FIGs. 6A-6E are exemplary interfaces for Internet connection  
options;

      FIGs. 7A-7C are exemplary process flow diagrams for a  
getting started wizard;

20       FIG. 7D is an exemplary dialog box for allowing a user to  
cancel a getting started wizard;

      FIGs. 8A-8B are exemplary interfaces for registration;

      FIGs. 9A-9N are exemplary interfaces for registration and  
receiving user information;

25       FIG 10A is an exemplary process flow diagram for a  
registration wizard;

      FIGs. 10B-10O are exemplary interfaces for a registration  
wizard;

30       FIGs. 11A-11B are exemplary process flow diagrams for a  
print wizard;

      FIGs. 11C-11L are exemplary interfaces for a printing  
wizard;

      FIG. 12A is an exemplary process flow diagram for a re-  
registration process;

1        FIGs. 12B-12D are exemplary interfaces for a re-registration wizard;

      FIGs. 13A-13N are exemplary interfaces for a print wizard;

5        FIGs. 14A-14B are exemplary diagrams showing an indicium printed on an envelop;

      FIGs. 15A-15B are exemplary diagrams of an envelop with and without a graphic paced in the area to the left of the return address, respectively;

10       FIG. 15C is an exemplary interface for an envelop printing option;

      FIGs. 16A-16B are exemplary interfaces for addition of an address book;

      FIGs. 17A-17G are exemplary interfaces for messages;

      FIG. 18 is an exemplary interface for a main menu;

15       FIG. 19A is an exemplary process flow diagram for a change of address process;

      FIGs. 19B-19I are exemplary interfaces for change of address;

20       FIGs. 20A-20C are exemplary interfaces for change payment method;

      FIGs. 21A-21D are exemplary interfaces for change service plan;

      FIG. 21E is an exemplary interface for change e-mail information;

25       FIGs. 22A-22B are exemplary interfaces for password entry & verification;

      FIG. 23 is an exemplary interface for a meter withdrawal;

      FIG. 24 is an exemplary process flow diagram for a registration wizard; and

30       FIGs. 25A-25C are exemplary interfaces for setting up a digital scale.

#### DETAILED DESCRIPTION

35       An exemplary on-line postage system is described in U.S. patent Application No. 09/163,993 filed September 15, 1998, the

1 entire content of which is hereby incorporated by reference  
herein. The on-line postage system includes an authentication  
protocol that operates in conjunction with the USPS. The system  
utilizes on-line postage system software comprising user code  
5 that resides on a client system and controller code that resides  
on a server system. The on-line postage system allows a user to  
print a postal indicium at home, at the office, or any other  
desired place in a secure, convenient, inexpensive and fraud-free  
manner. The system comprises a user system electronically  
10 connected to a server system, which in turn is in communication  
with a USPS system.

Each of the cryptographic modules may be available for use  
by any user. When a user requests a PSD service, one of the  
available modules is loaded with data belonging to the user's  
15 account and the transaction is performed. When a module is  
loaded with a user's data ,that module becomes the user's PSD.  
The database record containing each user's PSD data is referred  
to as the "PSD package". After each PSD transaction is  
completed, the user's PSD package is updated and returned to a  
20 database external to the module. The database becomes an  
extension of the module's memory and stores not only the items  
specified by the IBIP for storage inside the PSD, but also the  
user's personal cryptographic keys and other security relevant  
data items (SRDI) and status information needed for operating  
25 continuity. Movement of this sensitive data between the modules  
and the database is secured to ensure that PSD packages could not  
be compromised.

In one embodiment, the server system is remotely located in  
a separate location from the client system. All communications  
30 between the client and the server are preferably accomplished via  
the Internet. FIG. 1 illustrates a remote client system 220a  
connected to a server system 102 via the Internet 221. The  
client system includes a processor unit 223, a monitor 230,  
printer port 106, a mouse 225, a printer 235, and a keyboard 224.  
35

1 Server system 102 includes Postage servers 109, Database 130, and cryptographic modules 110.

5 An increase in the number of servers within the server system 102 will not negatively impact the performance of the system, since the system design allows for scalability. The Server system 102 is designed in such a way that all of the business transactions are processed in the servers and not in the database. By locating the transaction processing in the servers, increases in the number of transactions can be easily handled by adding additional servers. Also, each transaction processed in the servers is stateless, meaning the application does not remember the specific hardware device the last transaction utilized. Because of this stateless transaction design, multiple servers can be added to each appropriate subsystem in order to handle increased loads.

15 Furthermore, each cryptographic module is a stateless device, meaning that a PSD package can be passed to any device because the application does not rely upon any information about what occurred with the previous PSD package. Therefore, multiple cryptographic modules can also be added to each appropriate subsystem in order to handle increased loads. A PSD package for each cryptographic module is a database record, stored in the server database, that includes information pertaining to one customer's service that would normally be protected inside a cryptographic module. The PSD package includes all data needed to restore the PSD to its last known state when it is next loaded into a cryptographic module. This includes the items that the IBIP specifications require to be stored inside the PSD, information required to return the PSD to a valid state when the record is reloaded from the database, and data needed for record security and administrative purposes.

25 In one embodiment, the items included in a PSD package include ascending and descending registers (the ascending register "AR" records the amount of postage that is dispensed or printed on each transaction and the descending register "DR"

1 records the value or amount of postage that may be dispensed and  
decreases from an original or charged amount as postage is  
printed.), device ID, indicia key certificate serial number,  
licensing ZIP code, key token for the indicia signing key, the  
5 user secrets, key for encrypting user secrets, data and time of  
last transaction, the last challenge received from the client,  
the operational state of the PSD, expiration dates for keys, the  
passphrase repetition list and the like.

10 As a result, the need for specific PSDs being attached to  
specific cryptographic modules is eliminated. A Postal Server  
subsystem provides cryptographic module management services that  
allow multiple cryptographic modules to exist and function on one  
server, so additional cryptographic modules can easily be  
installed on a server. The Postal Sever subsystem is easy to  
15 scale by adding more cryptographic modules and using commonly  
known Internet load-balancing techniques to route inbound  
requests to the new cryptographic modules.

20 Referring back to FIG. 1, Postage servers 109 provide  
indicia creation, account maintenance, and revenue protection  
functionality for the on-line postage system. The Postage  
servers 109 include several physical servers in several distinct  
logical groupings, or services as described below. The  
individual servers could be located within one facility, or in  
several facilities, physically separated by great distance but  
25 connected by secure communication links.

30 Cryptographic modules 110 are responsible for creating PSDs  
and manipulating PSD data to protect sensitive information from  
disclosure, generating the cryptographic components of the  
digital indicia, and securely adjusting the user registers. When  
a user wishes to print VBI , for example, postage or purchase  
additional VBI or postage value, a user state is instantiated in  
the PSD implemented within one of the cryptographic modules 110.  
Database 111 includes all the data accessible on-line for indicia  
creation, account maintenance, and revenue protection processes.  
35 Postage servers 109, Database 130, and cryptographic modules 110

1 are maintained in a physically secured environment, such as a vault.

FIG. 2 shows a simplified system block diagram of a typical Internet client/server environment used by an on-line postage system in one embodiment of the present invention. PCs 220a-220n used by the postage purchasers are connected to the Internet 221 through the communication links 233a-233n. Each PC has access to one or more printers 235. Optionally, as is well understood in the art, a local network 234 may serve as the connection between some of the PCs, such as the PC 220a and the Internet 221 or other connections. Servers 222a-222m are also connected to the Internet 221 through respective communication links. Servers 222a-222m include information and databases accessible by PCs 220a-220n. The on-line VBI system of the present invention resides on one or more of Servers 222a-222m.

In this embodiment, each client system 220a-220m includes a CPU 223, a keyboard 224, a mouse 225, a mass storage device 231, main computer memory 227, video memory 228, a communication interface 232a, and an input/output device 226 coupled and interacting via a communication bus. The data and images to be displayed on the monitor 230 are transferred first from the video memory 228 to the video amplifier 229 and then to the monitor 230. The communication interface 232a communicates with the servers 222a-222m via a network link 233a. The network link connects the client system to a local network 234. The local network 234 communicates with the Internet 221.

In one embodiment, a customer, preferably licensed by the USPS and registered with an IBIP vendor (such as Stamps.com), sends a request for authorization to print a desired amount of VBI, such as postage. The server system verifies that the user's account holds sufficient funds to cover the requested amount of postage, and if so, grants the request. The server then sends authorization to the client system. The client system then sends image information for printing of a postal indicium for the

1 granted amount to a printer so that the postal indicium is printed on an envelope or label.

When a client system sends a VBI print request to the Server, the request needs to be authenticated before the client system is allowed to print the VBI, and while the VBI is being printed. The client system sends a password (or passphrase) entered by a user to the Server for verification. If the password fails, a preferably asynchronous dynamic password verification method terminates the session and printing of the VBI is aborted. Also, the Server system communicates with a system located at a certification authority for verification and authentication purposes.

In one embodiment, the information processing components of the on-line postage system include a client system, a postage server system located in a highly secure facility, a USPS system and the Internet as the communication medium among those systems. The information processing equipment communicates over a secured communication line.

Preferably, the security and authenticity of the information communicated among the systems are accomplished on a software level through the built-in features of a Secured Socket Layer (SSL) Internet communication protocol. An encryption hardware module embedded in the server system is also used to secure information as it is processed by the secure system and to ensure authenticity and legitimacy of requests made and granted.

The on-line VBI system does not require any special purpose hardware for the client system. The client system is implemented in the form of software that can be executed on a user computer (client system) allowing the user computer to function as a virtual VBI meter. The software can only be executed for the purpose of printing the VBI indicia when the user computer is in communication with a server computer located, for example, at a VBI meter vendor's facility (server system). The server system is capable of communicating with one or more client systems simultaneously.



1 In one embodiment of the present invention, the  
cryptographic modules 110 are FIPS 140-1 certified hardware cards  
that include firmware to implement PSD functionality in a  
cryptographically secure way. The cryptographic modules are  
5 inserted into any of the servers in the Postal Server  
Infrastructure. The cryptographic modules are responsible for  
creating PSDs and manipulating PSD data to generate and verify  
digitally signed indicia. Since the PSD data is created and  
signed by a private key known only to the module, the PSD data  
10 may be stored externally to the cryptographic modules without  
compromising security.

The on-line VBI system is based on a client/server  
architecture. Generally, in a system based on client/server  
architecture the server system delivers information to the client  
15 system. That is, the client system requests the services of a  
generally larger computer. In one embodiment, the client is a  
local personal computer and the server is a more powerful group  
of computers that house the information. The connection from the  
client to the server is made via a Local Area Network, a phone  
20 line or a TCP/IP based WAN on the Internet. A primary reason to  
set up a client/server network is to allow many clients access  
to the same applications and files stored on the server system.

In one embodiment, Postage servers 109 include a string of  
servers connected to the Internet, for example, through a T1  
25 line, protected by a firewall. The firewall permits a client  
system to communicate with a server system, only if the  
information packet transmitted by the client system complies with  
a security policy set by the server system. The firewall not  
only protects the system from unauthorized users on the Internet,  
30 it also separates the Public Network (PUBNET) from the Private  
Network (PRVNET). This ensures that packets from the Internet  
will not go to any location but the PUBNET. The string of  
servers form the different subsystems of the on-line postal  
system. The services provided by the different subsystems of the  
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1 on-line postage system are designed to allow flexibility and expansion and reduce specific hardware dependancy.

The Database subsystem is comprised of multiple databases. FIG. 4 illustrates an overview of the on-line VBI system which includes the database subsystems. Database 411 includes the Affiliate DBMS and the Source IDs DBMS. The Affiliate DBMS manages affiliate information (e.g., affiliate's name, phone number, and affiliate's Website information) that is stored on the Affiliate Database. Using the data from this database, marketing and business reports are generated. The Source IDs Database contains information about the incoming links to the vendor's Website (e.g., partners' information, what services the vendor offers, what marketing program is associated with the incoming links, and co-branding information). Using the data from this database, marketing and business reports are generated.

The Online Store Database 412 contains commerce product information, working orders, billing information, password reset table, and other marketing related information. Website database 410 keeps track of user accesses to the vendor website. This database keeps track of user who access the vendor website, users who are downloading information and programs, and the links from which users access the vendor website. After storing these data on the Website Database 410, software tools are used to generate the following information:

- Web Site Status
- Web Site Reports
- Form Results
- Download Successes
- Signup, Downloads, and Demographic Graphs
- Web Server Statistics (Analog)
- Web Server Statistics (Web Analyzer)

Offline database 409 manages the VBI (e.g., postal) data except meter information, postal transactions data, financial transactions data (e.g., credit card purchases, free postage issued, bill credits, and bill debits), customer marketing

1 information, commerce product information, meter license  
 information, meter resets, meter history, and meter movement  
 information. Consolidation Server 413 acts as a repository for  
 data, centralizing data for easy transportation outside the vault  
 5 400. The Consolidation Server hosts both file and database  
 services, allowing both dumps of activity logs and reports as  
 well as a consolidation point for all database data. The Offline  
 Reporting Engine MineShare Server 415 performs extraction  
 transformation from the holding database that received  
 10 transaction data from the Consolidated Database (Commerce  
 database 406, Membership database 408, and Postal Database 407).  
 Also, the Offline Reporting Engine MineShare Server handles some  
 administrative tasks. Transaction data in the holding database  
 contains the transaction information about meter licensing  
 15 information, meter reset information, postage purchase  
 transactions, and credit card transactions. After performing  
 extraction transformation, business logic data are stored on  
 Offline Database 409. Transaction reports are generated using  
 the data on the Offline Database. Transaction reports contain  
 20 marketing and business information.

The Data Warehouse database 414 includes all customer  
 information, financial transactions, and aggregated information  
 for marketing queries (e.g., how many customers have purchased  
 postage). In one embodiment, commerce Database 406 includes a  
 25 Payment Database, an E-mail Database, and a Stamp Mart Database.  
 The E-mail DBMS manages access to the contents of e-mail that  
 were sent out to everyone by vendor servers. The Stamp Mart  
 database handles order form processing. The E-commerce Server  
 404 provides e-commerce related services on a user/group  
 30 permission basis. It provides commerce-related services such as  
 payment processing, pricing plan support and billing as well as  
 customer care functionality and LDAP membership personalization  
 services. A Credit Card Service is invoked by the E-commerce  
 Server 404 to authorize and capture funds from the customer's  
 35 credit card account and to transfer them to the vendor's merchant

1 bank. A Billing Service is used to provide bills through e-mail  
to customers based on selected billing plans. An ACH service runs  
automatically at a configurable time. It retrieves all pending  
ACH requests and batches them to be sent to bank for postage  
5 purchases (i.e. money destined for the USPS), or Chase for fee  
payments which is destined for the vendor account.

The E-commerce DBMS 406 manages access to the vendor  
specific Payment, Credit Card, and Email Databases. A Membership  
DBMS manages access to the LDAP membership directory database 408  
10 that hosts specific customer information and customer membership  
data. A Postal DBMS manages access to the Postal Database 407  
where USPS specific data such as meter and licensing information  
are stored. A Postal Server 401 provides secure services to the  
Client, including client authentication, postage purchase, and  
15 indicia generation. The Postal Server requires cryptographic  
modules to perform all functions that involve client  
authentication, postage purchase, and indicia generation.

Postal Transaction Server 403 provides business logic for  
postal functions such as device authorization and postage  
20 purchase/register manipulation. The Postal Transaction Server  
requires the cryptographic modules to perform all functions.  
There are four Client Support Servers. Address Matching Server  
(AMS) 417 verifies the correct address specified by a user.  
When the user enters a delivery address or a return address using  
25 the Client Software, the user does not need the address matching  
database on the user's local machine to verify the accuracy of  
the address. The Client software connects to the vendor's server  
and uses the central address database obtained from the USPS to  
verify the accuracy of the address. If the address is incorrect,  
30 the client software provides the user with a prioritized list of  
addresses to match the correct address. These choices are ranked  
in a user definable order. This information is represented using  
a plain text format.

The Client Support Servers 417 provides the following  
35 services: a Pricing Plan service, an Auto Update service, and a

1 Printer Config service. The Pricing Plan Service provides  
information on pricing plans and payment methods available to the  
user. It also provides what credit cards are supported and  
whether ACH is supported. This information is represented  
5 preferably using a plain text format. The Auto Update Service  
verifies whether the user is running the latest Client Software.  
If there is newer Client Software, the Auto Update Server  
downloads the new patches to the user computer. The Client  
Support Database has tables for the client software update  
10 information. This information is represented using a plain text  
format. Before the user tries to print postage, the user sends  
his or her printer driver information over the Internet in plain  
text. A Printer Config Service looks up the printer driver  
information in the Printer Driver Database to determine whether  
15 the printer driver is supported or not. When the user tries to  
configure the printer, the user prints a test envelope to test  
whether the postage printing is working properly or not. This  
testing envelope information is sent over the Internet in plain  
text and is stored in the Client Support Database.

20 MeterGen server 422 makes calls into the cryptographic  
module to create sufficient meters to ensure that the vendor can  
meet customer acquisition demands. SMTP Server 418 communicates  
with other SMTP servers, and it is used to forward e-mail to  
users. Gatekeeper Server works as a proxy server by handling the  
25 security and authentication validation for the smart card users  
to access customer and administration information that reside in  
the vault. The Proxy Server 423 uses the Netscape™ Enterprise  
SSL library to provide a secure connection to the vault 400.  
Audit File Server 419 acts as a repository for module transaction  
30 logs. The Audit File Server verifies the audit logs that are  
digitally signed. The audit logs are verified in real time as  
they are being created. Postal Server writes audit logs to a  
shared hard drive on the Audit File Server. After these logs are  
verified, the Audit File Server preferably moves them from the  
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1 shared hard drive to a hard drive that is not shared by any of the vendor servers.

Provider Server provides reporting and external communication functionality including the following services.

5 CMLS Service forwards license applications and it processes responses from CMLS. The CMLS Service uses cryptographic functions provided by the Stamps.com Crypt library to decrypt the user's SSN/Tax ID/Employee ID. CMRS Service reports meter movement and resetting to the USPS Computerized Meter Resetting infrastructure. ACH Service is responsible for submitting ACH postage purchase requests to the USPS lockbox account at the bank. The CMLS Service uses cryptographic functions to decrypt the user's ACH account number. After decrypting ACH account information, the ACH is encrypted using the vendor's script library. Then, the encrypted ACH file is e-mailed to the Commerce Group by the SMTP server. When the Commerce Group receives this encrypted e-mail, the vendor's Decrypt utility application is used to decrypt the ACH e-mail. After verifying the ACH information, the Commerce Group sends the ACH information through an encrypted device first and then uses a modem to upload the ACH information to a proper bank. The Certificate Authority issues certificates for all IBIP meters. The certificates are basically used to provide authentication for indicia produced by their respective meters.

25 The following are the steps describing the certificate authorization process:

- MeterGen asks the module to create a meter package,
- The module returns a package and the meter's public key,
- MeterGen creates a certificate request with the public key, signs the request with a USPS-issued smartcard, and submits the request to the USPS Certificate Authority,
- The Certificate Authority verifies the request came from the vendor then, it creates a new certificate and returns it to MeterGen,

- 1 • MeterGen verifies the certificate using the USPS  
Certificate Authority's certificate (e.g., to ensure it  
wasn't forged) and stores the certificate information in  
the package. The package is now ready to be associated  
5 with a customer.

The Postal Server subsystem 401 manages client and remote  
administration access to server functionality, authenticates  
clients and allows clients to establish a secure connection to  
the on-line postage system. The Postal Server subsystem also  
10 manages access to USPS specific data such as PSD information and  
a user's license information. The Postal Server subsystem  
queries the Postal portion of the Database subsystem for the  
necessary information to complete the task. The query travels  
through the firewall to the Postal portion of the Database  
15 subsystem. The Postal Server subsystem is the subsystem in the  
Public Network that has access to the Database subsystem.

In one embodiment of the present invention, Postal Server  
401 is a standalone server process that provides secure  
connections to both the clients and the server administration  
20 utilities, providing both client authentication and connection  
management functionality to the system. Postal Server 401 also  
houses postal-specific services that require high levels of  
security, such as purchasing postage or printing indicia. Postal  
Server 401 is comprised of at least one server, and the number  
25 of servers increases when more clients need to be authenticated,  
are purchasing postage or are printing postage indicia.

The growth in the number of servers of the Postal Server  
will not impact the performance of the system since the system  
design allows for scalability. The Postal Server is designed in  
30 such a way that all of the business logic is processed in the  
servers and not in the database. By locating the transaction  
processing in the servers, increases in the number of  
transactions can be easily handled by adding additional servers.  
Also, since each transaction is stateless (the application does  
35 not remember the specific hardware device the last transaction

1 utilized), multiple machines can be added to each subsystem in order to handle increased loads. In one embodiment, load balancing hardware and software techniques are used to distribute traffic among the multiple servers.

5 The client software includes GUI and wizards for software installation, user registration, printing of VBI, account information access, payment, and the like. An installation wizard helps the user to install the client software. FIG. 3 is an exemplary flow for the installation routine. In blocks 301-10 305, the user agrees to the software license agreement and selects a destination directory and folder for the installation software. In blocks 306-307, the user selects the appropriate ISP and connects to Internet. Links to other application software and address book are installed in blocks 308 and 309, respectively. Any desired plugin software is downloaded and installed in blocks 312 and 315. In block 311, the program files are installed and in block 314 the Readme is installed and the user computer is re-booted. The install wizard supports an Auto Update before the software is installed. Specifically, the 15 install wizard checks the server for a newer version of the client software before installing the software. If a newer version is available, then the install wizard notifies the user that a newer version is available on the server, and prompts the user whether or not the file is downloaded. If a newer version is not available, then the install wizard proceeds. 20 25

The install routine supports the installation of third party applications, including MS Word™, and Word Perfect™. The plugins for these applications are preferably included in the download file. The install wizard preferably prompts the users which of 30 these, if any, they would like to install. An exemplary interface is shown in FIG. 5A. Address book plugins help the user select an appropriate plugin to support the function of an address book. The Install Address Book plugins are not part of the standard download file in the preferred embodiment. Rather, 35 each plugin is its own file that resides on the web. The install



1 wizard preferably prompts the user which, if any of the plugins  
is installed. If multiple selections are made, the user is  
prompted for a default address book. The interface for this  
function is shown in FIG. 5B. This list is dynamic so that the  
5 Address Book plugins can be added or subtracted without requiring  
a full client update.

The installation routine also supports OEM branding.  
Specifically, the install wizard is such that the elements  
described in OEM branding are stored in a resource file, so that  
10 the install routine itself preferably does not need to be changed  
- rather the resource file is changed. The installation routine  
or the Getting Started wizard also supports the OEM branding  
requirements. Specifically, a cookie is read and its contents  
are uploaded to the server.

15 FIGs 6A-6E are exemplary interfaces for the Internet  
connections. As shown in FIG. 6A, once the "I connect with my  
modem..." radio button is selected, the "Click here to confirm  
settings text" and "Settings..." button become available. When "I  
connect using AOL" is chosen, then an additional wizard screen  
20 is seen by the user as shown in FIG. 6B...If "I connect using  
CompUServe is chosen, an additional wizard screen is seen by the  
user as shown in FIG. 6B.

25 When the user first attempts to log in, and a connection  
cannot be established, an error message appears based upon which  
connection method the user has chosen. In one embodiment, if the  
user chose to connect by a local area network, the error message  
shown in FIG. 6C appears. if the user chose to connect by a dial  
up networking connection, the error message shown in FIG. 6D  
appears. if the user chose to connect using AOL, the error  
30 message shown in FIG. 6E appears.

Before a user can begin to print postage, a significant  
number of tasks are preferably first completed. These steps are  
combined into a wizard that launches after the customer installs the  
client software. The preferred goal is to provide a single,  
35 streamlined interface that removes any interruptions once the user

1 completes the wizard. The overall flow of the user experience in  
getting started with the software is shown in FIG. 7A. The Getting  
Started wizard includes five main components, a Welcome component  
is responsible for welcoming the user (customer), and determining  
5 whether or not the user should proceed through the complete  
Getting Started wizard at this time. A Sign up for Service group  
of screens leads the customer through signing up for a service  
plan. A Registration wizard group of screens handles the meter  
license application, and can also be accessed through the client  
10 application through the Options screen. A Print Setup group of  
screens take the user through printer verification and printing  
a quality assurance (QA) envelope. This component of the Getting  
Started wizard includes several independent wizards which can be  
accessed through the client software. The Finish portion of the  
15 Getting Started wizard congratulates the user and launches the  
client software. Preferably, the Getting Started wizard is  
comprised of multiple components to facilitate their reuse as  
individual wizards within the client software.

Typically, the volume of screens that make up the Getting  
20 Started wizard are significant. In order to prevent the user  
from being overwhelmed with the process, preferably the system  
constantly gives the customer a sense as to where they are in the  
process. To satisfy this goal, the software utilizes a "Follow  
the Yellow Brick Road" interface, which constantly updates the  
25 users on their progress in the wizard. The left side graphic  
area is used to indicate which of these stages that the user is  
currently in. In one embodiment, the stage is indicated using  
text, with the current stage being highlighted. Using text  
rather than graphics helps minimize the download size.

30 Each screen of the Getting Started wizard preferably has a  
Help button which links to a portion of the Help file that  
pertains to that screen. Whenever a combo box is used in this  
wizard, by default no item is selected, and the prompt "select  
one" preferably appears to the user. Preferably, every screen  
35 in the Getting Started wizard has a Cancel button on it. The

1 functionality of these buttons is consistent throughout the wizard. The various functions that are executed when a user selects the Cancel button are described below.

5 The Verification Prompt is a standard prompt that verifies the user indeed would like to cancel the wizard. This is accomplished through a standard dialog box as shown in FIG. 7D. A Save Data button is also provided. When the user selects the Cancel button, all of the data that the user has input is saved locally. If the user starts the Getting Started wizard at a later time, all of the information that was previously entered is filled into the appropriate screen in the wizard. Using an upload Data button, the client preferably uploads the following data to a log on one of the servers; Customer email, the screen that the user catcalled on (resource ID), and the source (OEM partner, affiliate, etc.). When the Getting Started wizard first attempts to establish an Internet connection and experiences an error in connecting, error messages appear depending upon the connection method chosen by the user.

15 The Welcome portion of the Getting Started wizard provides two functions. First, it welcomes the user to the process and gives the user an idea of what is involved in the process. Second, it determines whether or not a user should complete the Getting started wizard at this time. There are two reasons why a user is kept from completing the Getting Started wizard, as shown in FIG. 7B. The first is if the user has previously completed the Getting Started wizard, shown by block 721. The second is when the provider's service is over booked and there is no opening available for the user, as shown by block 723. When this portion of the Getting Started wizard has begun, the Follow the Yellow brick Road text t reads "Start". The logical flow of the Sign up for Service component is shown in FIG. 7B.

25 The Welcome Screen #1 720, in FIG. 7B, lists three major steps that the customer should complete in order to finish the wizard. As shown in FIG. 8A, the screen includes a smaller version of each screen group graphic to help the customers

1 recognize each screen group as they come to it. The "Welcome"  
step of the "Follow the Yellow-brick Road" list is highlighted  
to show the customers that they are on the Welcome screen. A  
check box allows a user to skip the Registration and Print  
5 Configuration wizard. If the user selects the check box, the  
wizard closes and the "rereg" dialog box appears. The default  
state for the check box is unselected.

10 If there is no slot available for the user, the Welcome  
Screen #2 725, in FIG. 7B, appears to the user in the event that  
the user cannot be signed up the user at that time. A URL link  
button links the user to the web site on the page where the user  
can pre-register, as shown in FIG. 8B. By pre-registering, the  
user will later be notified when a slot is available.

15 At this point in the Getting Started wizard, the client  
preferably downloads information from the server for use  
throughout the remainder of the wizard. Specifically, the  
information that is downloaded includes Service Plan Information  
such as Plan Name, Plan ID, Text file describing all of the  
plans, Contract for the plan (text file), Min purchase amount,  
20 Max purchase amount, Purchase Upfront (y/n), URL link to full  
description (common web link for all plans), Preferred Service  
Plan; and Payment Information including Payment types accepted,  
and Preferred payment type.

25 The Sign up for Service component of the Getting Started  
wizard extracts all of the information required to sign up the  
user for service with the provider. When this portion of the  
Getting Started wizard has begun, the "Follow the Yellow Brick  
Road" text is changed to "Register with Provider" (e.g.,  
Stamps.com). The logical flow of the Sign up for Service  
30 component is shown in FIG. 7C.

35 Service Screen #1 (block 730 of FIG. 7C) is shown in FIG.  
9A. The "Send me information..." checkbox is checked by default.  
Selection of this check box provides a database entry that  
designates that the provider and its partners have the right to  
solicit the user with marketing programs. The "Next>" button is

1 not enabled until all required information is filled in.  
 Required information for this screen includes the First Name,  
 Last Name, Phone, and Email.

5 Service Screen #2 (block 731 of FIG. 7C ) is depicted in  
 FIG. 9B. The fields in the upper portion of the screen allow the  
 user to enter the physical location of the user computer. The  
 lower portion of the screen allows the user to enter mailing  
 address information in one of two ways. If the user selects the  
 "Use physical address" check box, the values stored for the  
 10 mailing address are made to be the same as those of the physical  
 address, and the "Next>" button becomes enabled. Otherwise, the  
 mailing address fields are enabled for user input. The "Next>"  
 button is not enabled until all required fields are filled in.  
 After the user selects "Next>", an AMS check on the address is  
 15 performed, as shown by block 732 of FIG. 7C. The client checks  
 for a PO Box in the physical address fields, as shown by block  
 733 of FIG. 7C. In blocks 734 and 735, if a P.O. Box is  
 provided, an error message preferably indicates that a P.O. Box  
 is not acceptable.

20 After service screen #2 is completed, in block 736, an AMS  
 check on the addresses is run. Also, a check is made as to  
 determine whether the zip code that the user provides is  
 currently the one that is supported, as shown in block 737. If  
 it is determined that the physical zip code is one that is  
 25 supported, the user continues with service screen #3 in block  
 739. If the zip code is NOT one that is supported, Service  
 Screen #2a appears to notify the user that the user is unable to  
 sign up at this time, as depicted in block 738. An exemplary  
 interface for Service Screen #2a is shown in FIG. 9C. A URL link  
 30 button links the user to the provider's site on the page where  
 the user can pre-register. By pre-registering, the user is  
 notified later when a slot is available within the zip code for  
 the physical address that is provided.

In block 739, the user enters "user name" and "password."  
 35 An exemplary interface for Service Screen #3 is shown in FIG. 9D.

1 The password preferably comprises at least 6 characters, with at  
 least 1 alpha character and 1 numeric character. The "Next>"  
 button is not enabled until all the information has been filled  
 in. In block 743, Service Screen #4 captures information that  
 5 either Customer Service or the client software can use to verify  
 a customer's identity in the event that the customer loses  
 his/her password. An exemplary interface for Service Screen #4  
 is shown in FIG. 9E. The key word, or "secret code" is the  
 answer that the user gives to a question selected by the user.  
 10 The default questions that the user may select from include;

- What is your mother's maiden name?
- What is your favorite pets name?
- What is your favorite vacation spot?
- What is your place of birth?

15 After selecting a question, the user can enter a response  
 into an edit field. The "Next>" button is not enabled until  
 after the information is filled in.

In block 744, in Service Screen #5, the users specify how  
 they will use the account. Preferably, none of the radio buttons  
 are selected on open. An exemplary interface for Service Screen  
 20 #5 is shown in FIG. 9F. The company information fields and text  
 are grayed-out and disabled until the user selects one of the  
 three business radio buttons. The "Next>" button is not enabled  
 until the user selects the "Personal/Individual" radio button or  
 25 until the required business fields are populated if the user  
 selects one of the business radio buttons. In addition to  
 storing the user's response for use by the provider, the user's  
 input is interpreted in order to pre-fill portions of the meter  
 license. Specifically, if the user selects the first radio  
 30 button, "Personal/Individual Use", the user is categorized as a  
 "personal" user for the meter license application. If any of the  
 other three radio buttons are selected, the user is categorized  
 as a business user for the meter license. If the user selects  
 one of the business categories, the data input into the business  
 35 fields is stored both for use by the provider and for insertion

1 into the meter license application.

Service Screen #6, in block 745, provides several types of information all related to the user's postage usage habits, for use both by the provider and the USPS. In this screen, as depicted in FIG. 9G, the user specifies their mail volume using a spinner box and the letter category is split into window and standard envelopes. In addition, a question is asked with yes or no radio button response options (Do you currently lease or rent a traditional postage meter?). The "Next>" button is preferably not enabled until the user has selected a value in each box. The mail volume box is blank by default. Each of the four percentage boxes preferably has a 0 in it. When the user hits the "Next>" button, verify that the percentage boxes add up to 100%. When storing the percentages for use in the USPS meter license application, the first two percentages (letters - standard envelopes and letters - windowed / pre printed) are added together to create the value for the USPS "letters" category. The other two percentages map equally to their USPS counterparts.

Service Screen #7 (block 746) allows the user to select a service plan from the provider. The following information is preferably downloaded at the beginning of the registration wizard: Service Plan names, a URL to a page on the provider's web site that describes the service plans in detail, and text files describing each service plan. FIG. 9H depicts an exemplary interface for this screen. The drop down box preferably displays all available plans at the time. No plans are selected by default, and the prompt "Select One" appears. At this time, a text file that briefly describes all of the plans currently available is displayed in a scrollable text window below. Once the user selects a plan, the text file below is changed to display a text file that describes only that plan. If a preferred service plan is defined, this plan is the first one to appear on the drop down list (still none of the plans selected by default). A URL link takes the user to provider's web site for details on the plans. The "Next>" button is disabled until

1 the user selects a plan.

As illustrated in block 747, Service Screen #8 displays the service contract for the service plan that the user selected on the previous screen. This contract is a text file, which is  
5 downloaded at the beginning of the registration wizard. As shown in FIG. 9I, neither of the two radio buttons are selected by default, and the "Next>" button is disabled until the user selects one of the choices. If the user selects "I Accept", the wizard will continue. If the user selects "I do NOT accept", a  
10 message box should appear as described below. This wizard screen should still remain open in the background behind this dialog box. If the user selects "I do NOT Accept on Screen #8 of FIG. 9I, a dialog box, shown in FIG. 9J, appears indicating that the user must accept the terms in order to sign up with the provider. If the user selects "Go Back", this dialog Box closes, and the user is brought back to screen #8 of the wizard. If the user selects "Cancel", the Getting Started is canceled.

Service Screen #9, depicted in FIG. 9K, is built dynamically, depending upon a user's response to the payment type prompt. The payment type field is empty by default. The values  
20 available for this field are preferably downloaded when the registration wizard begins. The "Next>" button is disabled before AND after a value is selected for the payment type. The "Next>" button remains disabled until the screen dynamically builds, and all of the fields are completed by the user. If a preferred payment method is defined, this method of payment is the first one to appear on the drop down list (still none of the payment method types are selected by default).

If a credit card is selected as the method of payment in  
30 decision block 750, the fields shown in the screen of FIG. 9L appear. The cardholder name and card number are both edit boxes. The expiration date is entered using two combo boxes. The prompt for the billing address allows the user to either enter an address manually, or copy the address given on service screen #2  
35 as a mailing address. If the user selects the "Use Mailing



1 Address" check box, the mailing address information is copied  
into the billing address fields, and these fields are disabled.  
All fields preferably should be filled in before the user can  
proceed. After the user selects "Next>", an AMS check on the  
5 address is performed, as shown in block 753.

If ACH method of payment is selected in decision block 750,  
the fields shown in screen of FIG. 9M appear. All fields  
preferably should be filled in before the user can proceed.  
Service Screen #10, in block 756 or 757, allows the user to  
10 purchase postage. The order is accepted at this time, but is not  
processed until the meter license has gone through. At the  
beginning of the registration wizard, the maximum and minimum  
purchase amounts associated with a service plan are downloaded.  
As shown in FIG. 9N, the user can enter a purchase in one of two  
15 ways: by selecting a pre-defined amount or by entering an amount  
into an edit box. In one embodiment, the pre-defined values of  
the radio buttons are \$10, \$25, \$50, \$100, and \$200. If any of  
these values are lower than the minimum purchase amount  
associated with the plan that the user has selected, then the  
20 associated radio button(s) is disabled. Similarly, if any of the  
pre-defined values are higher than the maximum purchase amount  
allowed by the plan that the user selected, then the associated  
radio button(s) is disabled. The Purchase Postage control allows  
the user to enter in both dollars and cents values. Preferably,  
25 none of the radio buttons are selected by default. If the  
selected plan offers free postage without requiring a purchase,  
the "Next>" button is always available. Otherwise, the "Next>"  
button is disabled until a purchase amount is selected. If the  
service plan selected by the user does not require the immediate  
30 purchase of postage, an additional radio button should appear  
which allows the user to select a value of "none."

As described above, the Registration Wizard is capable of  
gathering all of the information that is required by the USPS for  
a Meter License Application. The information that is extracted  
35 in this wizard is used to generate a USPS 3601A form. FIG. 10A

1 is an exemplary flow of the Registration wizard component of the  
Getting Started wizard. When this portion of the Getting Started  
wizard has begun, the Follow the Yellow Brick Road text is  
changed to "Apply for a Postage Meter". In block 1010, License  
5 Screen #1 serves the purpose of letting the user know that he/she  
is entering the portion of the wizard where the meter license is  
filled out. The follow the Yellow Brick Road text will change  
to meter License application., as shown in FIG. 10B.

10 In block 1011, the user determines whether they are a  
business or and end user. In License Screen #2 (block 1012), the  
user specifies which identification number they wish to use.  
None of the radio buttons are selected on open, as shown in FIG.  
10C. The "Next." button as well as the Tax ID#, EIN, and SSN  
fields are grayed-out and disabled. When the user selects a  
15 radio button, it enables the corresponding field. When the user  
begins to enter data in a field, it enables the "Next>" button.  
License Screen #3 (block 1013) is for the user to answer some  
business related questions, as depicted in FIG. 10D. The "Next>"  
button is not enabled until the questions are answered.

20 License Screen #3a (block 101a) only appears to business  
users. As illustrated in FIG. 10E, neither of the radio buttons  
are selected by default, and the edit fields and the Next button  
are preferably unavailable when the user first sees this screen.  
If the user selects "Yes", the Next button becomes available.  
25 If the user selects "No", the edit fields become available. Once  
all of the required fields have been completed, the Next button  
becomes available. License Screen #4 (block 1015) of FIG. 10F  
includes a field in which the user enters a Social Security #.  
The "Next>" button is not enabled until the field is filled in  
30 with a nine digit number. In License Screen #5 (block 1016) of  
FIG. 10G, neither radio button is selected by default. The  
"Next>" button is initially disabled. If the user selects the  
"No" radio button, the "Next>" button becomes available. If the  
user selects the "Yes" radio button, the "Next>" button is not  
35 enabled until at least one set of license and finance numbers

1 have been entered.

FIG. 10H is an exemplary interface for License Screen #6 of block 1017. In this screen, neither radio button is enabled by default. The "Next>" button is enabled if the user selects the "No" radio button or once the revoked reason field is populated if the user selects the "Yes" button. FIG. 10I is an exemplary interface for License Screen #7 of block 1018. In this screen, a check box is used to verify the accuracy of the information. Once the check box is selected, the "Next>" button is enabled and the information is submitted to the server. If the user does not select the checkbox, the only options are to go back and make changes or cancel the Getting Started wizard. In addition to the information that was gathered during the wizard, the following information need also be submitted; OEM #, Tracking #, 3<sup>rd</sup> Party Applications installed, and the Address Books that were installed.

An exemplary interface for License Screen #8 (block 1019) is illustrated in FIG. 10J. This screen serves the purpose of providing a status to the user while all of the information that has been provided in the wizard, including payment information, is uploaded. In addition to uploading the information that has been extracted as part of the Getting Started wizard, the OEM tracking ID is uploaded as well. For OEM partners, the ID is in a registry key. Initially, the "Next>" button on this screen is disabled, and only the text in the upper portion of the screen appears. Once the communication with the server is completed, the text "Select Next to continue" appears, and the "Next>" button becomes available.

In blocks 1021 and 1023, the information entered by the user is checked for any potential errors and the errors are reported to the user. Once the information has been submitted, the server is able to communicate if any of three errors occur with the information that the user has provided. These errors include a non unique user name, bad ACH information, and rejected credit card payment. If any of these errors occur, a wizard screen

1 appears that dynamically displays the error that is returned from  
the server. When the user selects "Next>", the appropriate  
wizard screen shown in FIG. 10K appears and allows the user to  
resubmit information. Preferably, the User cannot continue until  
5 the error is corrected. After correcting the error, the wizard  
returns to the submit screen. If an additional error is found,  
this routine is repeated.

10 In block 1028, if the user submits a non unique user name,  
the dialog box of FIG. 10L appears. This dialog box preferably  
has the same functionality of the user name wizard screen, except  
that the lower portion (the password portion) is not displayed,  
the suggest button appears, and the text changes as shown. If  
the user selects the Suggest button, the client populates the  
user name field with the suggestion that is sent down from the  
15 server. In block 1026, if the ACH check indicates that there is  
a problem with the ACH information, the dialog box depicted in  
FIG. 10M appears. This dialog is preferably the same as the  
select payment screen of the wizard, with one exception; the  
Payment Type is pre-filled with the selection "ACH" and as a  
20 result the ACH fields will be available. These fields are  
preferably pre-populated.

25 In block 1027, if a reject on a credit card process is  
received, the dialog box shown in FIG. 10N appears. This dialog  
is preferably the same as the select payment screen of the  
wizard, however, the Payment Type is pre-filled with the original  
credit card selection, with all of the associated fields pre-  
filled. In block 1024, the License Screen # 9, illustrated in  
FIG. 10O, serves the purpose of letting the user know that the  
meter license portion has been completed, and that the Print  
30 Configuration will be next. In addition, this screen dynamically  
lets the user know what the expected wait time is in the second  
paragraph based upon a "license approval delay variable" that is  
downloaded from the server. If the license approval delay  
variable is "0" (i.e. instant approval) then the second  
35 paragraph is not displayed. If the license approval delay has

1 a value other than 0, the second paragraph is displayed and  
dynamically inputs the delay amount as shown below. The variable  
number that is provided by the server is in hours. Once this  
verification is completed the user may proceed to Print Setup  
5 wizard, as shown in block 1025.

The Print Setup portion of the Getting Started wizard  
includes several wizard components, which can be broken out and  
used individually in the client software. These wizards are  
brought together into the Print Setup portion of the Getting  
10 Started wizard to provide all of the printing oriented checks and  
tasks that a user should complete before starting with the  
software. These include: Print Verification, Print QA envelope,  
and Determine top, center, or bottom envelope feed (if  
necessary). When this portion of the Getting Started wizard has  
15 begun, the Follow the Yellow Brick Road text is changed to "Test  
Printer". An exemplary flow of the Print Setup component is  
shown in FIG. 11A.

In block 1101, Print Setup Screen #1 is used to select  
default printer. This screen, shown in FIG. 11C, prepares the  
20 user for testing on the user's printer. A drop down box displays  
all of the printers that are installed on the user's system, and  
allows them to select the default printer to be used. When a  
user selects a printer, this printer is considered as being  
selected for the print jobs that are performed during this  
25 section of the wizard. In addition, this default selection is  
incorporated into the standard Print Prepare dialog box, and is  
therefore the printer chosen until the user selects otherwise.  
None of the printers is selected by default, and the "Next>"  
button preferably is not available until the user selects a  
30 printer.

In block 1102, Print Setup Screen #2, shown in FIG. 11D,  
allows the user to select two bits of information that are  
required before the print testing functions can be undertaken.  
The first is a drop down box, which allows users to select a  
35 envelope size to be used throughout the tests. These tests do

1 not allow a user to use labels, so only the envelope options  
appear. The second bit of information is whether or not the user  
wants to omit the return address or not. The user prompt is  
preferably different here than in the Print Options dialog. In  
5 this case, if the user selects, "yes", the return address is  
printed. If the user selects "no", the return address should not  
be printed. The answers to both of these items are stored and  
used for all testing undertaken within this portion of the  
wizard. The information that is gathered here is also used to  
10 populate the corresponding fields within the Print Postage and  
Print Options dialog boxes when the user first launched these  
screens. Neither the envelope sizes, nor the radio buttons  
contain values by default. Furthermore, the "Next>" button is  
preferably not available until the user selects an envelope size  
and answers the yes/no question.

15 In block 1103, it is determined whether the default printer  
information is in the printer database. If the printer  
information is not in the database, a printer troubleshooting  
routine is performed, as shown in block 1104. If the printer  
20 information is in the database, printer Screen #3, depicted in  
FIG. 11E, appears. This screen serves the function of notifying  
the user that postage is about to be printed, and making the user  
aware that an envelope must be loaded into the feeder. A graphic  
of an envelope being placed into a printer is preferably used to  
25 help re-enforce the action to the user. This screen is used  
multiple times during the Printer Setup portion of the Getting  
Started wizard. See the flow diagram for further details. The  
"Next>" button is available immediately. Once the "Next>" button  
has been selected, a sample QA envelope is printed, as shown in  
30 block 1106. In block 1107, the sample is compared with a sample  
shown in Printer Screen #4 of FIG. 11F. In this screen, neither  
of the radio buttons is selected by default, and the "Next>"  
button is not available until the user selects one. In block  
1108, if the samples do not compare, printer troubleshoot 2 is  
35 activated to perform the troubleshooting task, as illustrated in

1 block 1109. If the samples compare correctly, the printer information is uploaded and the money in the meter is checked, as shown in blocks 1110 and 1111 respectively.

5 Similar to Printer Screen #3, Printer Screen #4 serves the function of educating the user about QA envelopes, notifying the user that postage is about to be printed, and making the user aware that an envelope needs to be loaded into the feeder. A graphic of an envelope being placed into a printer is used to help re-enforce the action to the user. This section of the wizard, illustrated in FIG. 11G, only appears if there is money in the user's meter (this requires instant meter approval), as shown in blocks 1111 and 1112. The "Next>" button is available immediately. Once the "Next>" button has been selected, a QA envelope is printed in block 1114.

15 Next, in block 1115, Printer Screen #6, shown in FIG. 11H, appears. This screen's primary function is to educate the user that the QA envelope should be sent in immediately, or the user's meter license may be revoked. A graphic of an envelope being placed into a mail box is used to help re-enforce the action to the user. The "Next>" button is available immediately.

20 In the event that the user's printer is not in the printer database, the Print Configuration wizard is initiated. An exemplary flow for the Print Configuration wizard is shown in FIG. 11B. The first screen in this wizard is Printer Setup screen #3 (see FIG. 11E), which prompts the user to place an envelope in the printer feed tray. Once the user selects "Next>", a pattern including a circle, a square, and a triangle is printed. Only one of these shapes completely prints onto the envelope fed through the printer, so based upon which shape appears to the user, the system can ascertain if the printer feeds envelopes from the top, center, or bottom. The Printer Screen #7, shown in FIG. 11I, provides a means by which users can tell the client which of the shapes appear on the envelope. This is done through a series of radio buttons. None of the radio buttons is selected by default, and the "Next>" button is not

1 available until the user selects one of the options. If the user selects either the circle, square, or triangle, the appropriate offset is made, the information is sent to the server, and the user continues with screen #8 as shown in block 1126 and 1127.

5 In block 1123, if the user selects "none of the above match what I see" on screen # 7, Printer Screen #8, shown in FIG. 11J, appears to ask the user which option the user would like to pursue at this time. Three radio buttons provide the options. If the user selects the Try printing another sample option, 10 another shape design is sent to the printer, so that the comparison process can be undertaken again. Selecting the Try printing another sample to a different printer option links the user back to screen #1 of the Print Setup, allowing the user to select another printer and start the process again. Selecting 15 the Neither of these solutions work option indicates that the system cannot determine a feed offset and therefore cannot print envelopes using the user's printer. When "Next>" is selected, the message on screen #9 conveys this to the user. None of the radio buttons is selected by default, and the "Next>" button is 20 not available until the user selects one of the options.

If the user selects "neither of these solutions work" on screen # 8, print envelope is disabled and Printer Screen #9, shown in FIG. 11K, appears to ask the user to let the user know that he/she is not able to print postage onto envelopes, only 25 onto labels (see blocks 1128 and 1129). The "Next>" button is available immediately. Once selected, the client preferably disables printing to envelopes. A Finish portion of the Getting Started congratulates the user for completing the wizard, and launches the client. When this portion of the Getting Started 30 wizard has begun, the Follow the Yellow Brick Road text is changed to "Finish". An exemplary interface for Finish screen #1 is illustrated in FIG. 11L. The "Finish" button is preferably available immediately. Once the "Finish" button has been selected, the user is ready to launch the client software.

35 A re-registration process allows users to re-register across



1 systems. An exemplary flow for the re-registration process is  
shown in FIG. 12A. To begin the re-registration process, the  
user logs in as normal via the login dialog box shown in FIG.  
12B. The client sends the User Name, Password, and system  
5 identification information to the server. After checking for the  
validity of the user name and password, the server checks if the  
user is currently registered on the current system, or on another  
system. In block 1203, if the user is registered on the current  
system, login continues as normal, as shown in block 1204. If  
10 the user is currently registered on another system, in block  
1206, another check is made to determine if the user is currently  
logged into the provider's service. In block 1207, if the user  
is already logged in, the message in FIG. 12C appears. In block  
1209, when the user selects "OK" the login attempt is aborted.

15 In block 1208, if the user is currently registered on  
another system, and is not currently logged in, then the dialog  
box of FIG. 12D appears. This dialog box prompts the user as to  
whether the user wants to re-register is/her account on the  
current machine. In block 1210, if the user selects "Yes", the  
20 account is re-registered (block 1211). If the user selects "No",  
the login attempt is aborted (block 1212).

25 The client print engine prints a Facing Identification Mark  
(FIM) in accordance with USPS specifications. Preferably, the  
FIM is printed within 1/8" from the top of the envelope, and no  
more than 2 1/8" from the right hand edge, as shown in FIG. 13A.  
A print engine supports as broad of a range of printers as  
possible, utilizing whatever specialized techniques that are  
deemed appropriate for proper printing of the postage indicia  
(i.e. rotation and virtualization). Before rotation is applied  
30 to an individual client, a verification is performed to verify  
that the user's printer and print driver are known to work with  
this technique. This is accomplished using a check against a  
database of printers and printer drivers that are known to work  
with rotation within the client software. This database is  
35 preferably created through hands on testing. Some examples of

1 print dialog boxes for the Print Postage dialog box, Print Prompt  
 dialog box, and Printing Options dialog box are shown in FIGs.  
 13B-13I.

5 A Print Postage dialog box is the main interface from which  
 a user defines the postage to be printed. An exemplary interface  
 for this dialog box is illustrated in FIG. 13J. Return Address  
 items are grouped within their own frame. The Return Address box  
 is editable, allowing users to customize the return address by  
 simply typing into the box. Delivery Address items are grouped  
 10 within their own frame. The Delivery Address box is editable,  
 allowing users to insert a delivery address by simply typing into  
 the box. If a user adds an address which is not in the address  
 book, the user is prompted whether or not the address is added.  
 In the event that only a single recipient is chosen, the address  
 15 is displayed in the same format that it is in the return address  
 window. If multiple recipients are selected, the view is that  
 of a list box displaying the names of all of the recipients that  
 have been chosen. If multiple recipients are selected and  
 different recipients require mailing to different zones, then the  
 20 cost of postage is displayed next to that recipient.

"Do not print the Return Address" is unchecked by default.  
 Mail Type toggle buttons enable the user to select whether the  
 mail to be sent is a letter, flat, box or oversized box. This  
 information is used to determine what labels and/or envelopes are  
 25 available to the user, as well as what the postage rate will be.  
 The letter toggle is selected by default. Mail type description  
 field provides a brief description of the mail type that is  
 currently selected with the Mail Type toggle buttons. Print On  
 list box allows user to select from all Envelopes and Labels.  
 30 The items displayed in this list box are determined by the type  
 of mail that was selected in the previous list box. If a letter  
 is selected, only envelopes and labels approved by the USPS are  
 available. If a flat or box is selected, only labels approved  
 by the USPS are available. No values are selected by default.

35 The Enter Weight fields allow users to type in values or

1 select them using spinner controls. If the user has set up a  
digital scale, clicking on the scale button automatically pulls  
the value from the scale and display the value in these fields.  
After the initial use, the fields remember the last value. The  
5 "Select a Service" control is a list box, which shows the various  
services that are available and also displays the cost of each  
type of service for the mail piece that has been defined. The  
prices update as the user inputs information into the Enter  
Weight fields. If the user is typing a value, the display  
10 immediately updates as the user types. If zone based postage is  
used, and if multiple users are selected, the range of costs is  
displayed. Once a user has selected a mail service, a graphic  
of a check mark should appear immediately to the left of the item  
as shown. None of the items are selected by default. Available  
15 Postage display displays the available postage amount. Total  
Mailing Cost displays the cost of the total mailing when multiple  
recipients are selected.

Preview Window is dynamic, depending upon the selection from  
the "Print Onto" list Box. Print button decides whether to print  
20 a sample or real postage. This single print button advances the  
user to the Print Prompt screen. Options button launches the  
appropriate options dialog box, depending upon the selection type  
into the "Print Onto" list Box. If an envelope is selected, the  
Envelope Options dialog box will be launched. If a label is  
25 selected, the Label Options dialog box appears. In the event  
that multiple recipients and/or zone based postage rates are  
selected, portions of the Print Postage dialog changes slightly  
in their functionality, as shown in FIG. 13K.

In the exemplary screen of FIG. 13K, when multiple  
30 recipients are selected, they are displayed as a list with only  
the recipient name showing. When multiple recipients are  
selected which span multiple zones, the price of the mail piece  
going to an individual recipient is displayed next to the  
recipient's name. This display only appears after a weight value  
35 that warrants zone based postage has been entered. The Select

1 a Service list box shows a range of prices for the mailings. The  
Cost of Mailing display appears when multiple recipients are  
selected, and provides the user with a total cost for the  
mailing.

5 After the user has selected "Print" from the Print Postage  
dialog box, the Print Prompt dialog box of FIG. 13L appears.  
The Print Prompt dialog box takes on several functions, including  
selection of the printer, printer paper feed, and determination  
of whether a sample or real piece of postage is being printed.  
10 The printer list boxes provide a selection of available printers.  
Standard Windows displays (optional) display the selected  
printer. Existing printer feed information displays relevant  
information about the selected printer. Print Internet Postage  
and Print Sample buttons print postage, and the Configure button  
15 launches the Print Configuration wizard.

Envelope Options dialog box, depicted in FIG. 13M, is  
launched from the Print Postage dialog box when two conditions  
are met: 1) the user selects the "Options" button, and 2) an  
envelope is selected in the "Print Onto" drop down box. Do not  
20 print a FIM check box has a small graphic icon to let the user  
know what the FIM barcode is. Postdate Mail piece control has  
a text description as shown. If the user selects the check box,  
the edit box becomes available to allow editing. Indicium  
correction items allow the user to print two forms of special  
25 Indicia: postage correction and date correction. Return Address  
Graphic control allows the user to select a graphic to be printed  
with the return address. Return Address adjustments and Delivery  
Address adjustments controls provide margin adjustments for the  
return address and delivery address, respectively. Indicium  
30 graphics that can be displayed within the Indicium are preferably  
controlled by the provider. To accomplish this, the system  
provides graphics for the Indicium in a digitally signed format,  
embedded within a DLL. At a minimum, this graphic is used for  
OEM partners. The system also provides clip art for the Indicium  
35 graphics. The system therefore makes sure that this DLL can be

1 downloaded on its own, so that a clip art library can be updated  
without forcing a complete download of the client. If the DLL  
is not present, this control is unavailable.

5 FIG. 13N is an exemplary interface for a Label Options  
dialog box. This dialog box is launched from the Print Postage  
dialog box when the user selects the "Options" button, and a  
label is selected in the "Print Onto" drop down box. Do not  
print a FIM check box control has a small graphic icon to let the  
user know what a FIM barcode is. Postdate Mail piece control has  
10 a text description as shown. If the user selects the check box,  
the edit box becomes available. Indicium correction items allow  
the user to print two forms of special Indicia: postage  
correction and date correction. Indicium graphics that can be  
displayed within the Indicium are preferably controlled by the  
15 provider. To accomplish this, the system provides graphics for  
the Indicium in a digitally signed format, embedded within a DLL.  
At a minimum, this graphic is used for OEM partners. The system  
also provides clip art for the Indicium graphics. The system  
therefore makes sure that this DLL can be downloaded on its own,  
20 so that a clip art library can be updated without forcing a  
complete download of the client. If the DLL is not present, this  
control is unavailable. Delivery Address font control allows the  
user to change the font of the Delivery Address by launching a  
secondary dialog box.

25 A Print Configuration wizard helps the user undergo three  
major processes: determining top, center, or bottom offset (if  
needed), providing print verification, and Printing a QA  
envelope. The print engine preferably incorporates the  
provider's logo into the Indicium. Rather than integrating a  
30 single static logo graphic, the print engine accommodates a  
scalable graphic. The reasoning behind this is as follows. In  
order to conform to the FIM placement standards which requires  
that the FIM consistently be printed 2" +/- 1/8" from the right  
hand edge of the envelope, the space available between the FIM  
35 and the human readable portion of the Indicium will change

1 depending upon the right hand margin of the printer used, as  
shown in FIG. 14A. The logo is scaled to the maximum size  
available given the space constraints which arise from the  
individual printer margin. This approach ensures that the  
5 maximum log size is always used, as shown in FIG. 14B.

A means by which users can customize their mail piece with  
a graphic file of their choosing is provided by the system. The  
system provides users with the ability to incorporate a graphic  
into the return address space. Specifically, the client software  
10 allows the user to incorporate a standard graphic into the area  
to the left of the return address, as shown in FIG. 15A. The  
default state is that no logo is selected for this position. In  
the event that no logo is selected, the layout is as shown in  
FIG. 15B. The controls for the determination of the image to  
15 occupy this space are found in the Print Postage Options  
(Envelope Printing Options) dialog box of FIG. 15C. When Include  
Graphic check box is selected, it indicates that the print engine  
should print a graphic file. When this check box is not  
selected, the print engine should not print a graphic. The  
20 default for this check box is unselected. Selecting the Browse  
button opens a standard file browse dialog box, which allows the  
user to browse for and select a file. Preview Window provides  
a preview of the selected graphic once it has been selected.

A personal address book may be used by the user to print  
25 addresses on the mail pieces. The client's native address book  
is functional even when the user is offline. Specifically, the  
user is able to add addresses, edit addresses, import addresses,  
and remove addresses without requiring the user to login online.  
In order to ensure that every address that is entered, modified,  
30 or imported undergoes an AMS check, addresses undergo an AMS  
check at the time the postage is printed to an address (see  
Printing description). In addition to the native address book,  
the system provides support for a variety of external address  
books. Examples of some of the address books supported include  
35 Microsoft Outlook™, Schedule +™, Symantec ACT!™, Lotus

1 Organizer™, Lotus Notes™, GoldMine™, Microsoft Windows Address  
book, and the like.

5 The client's support for the external address books is such  
that the user can read data from any of these address books from  
within the standard client address book interface. The data is  
able to be read in real time. In addition, the user is able to  
make changes to addresses and write these changes back to the  
external address book. In order to allow the user to select  
10 which address book to use (either the native or any of the third  
party address books), several controls are added to the client  
Address Book interface, as shown in FIG. 16A. Select an Address  
Book combo box contains a list of all address books that are  
supported by the client, and have been installed by the user.  
The default is set to the system's Address Book. Preferably,  
15 this drop down box remembers the last selection. Select a  
database or file combo box control displays a list, which  
includes the default file or database (depending upon the  
provider), and any other file that the user has previously opened  
using the browse button. Browse button allows the user to open  
20 additional files or databases for the Address Book selected by  
launching the appropriate "open" dialog for the provider.  
Preferably, when possible, the only controls on the Address Book  
provider's open screen is the bare minimum that are required to  
open a file. The user can modify addresses using the  
25 "properties" button. Based upon which Address Book is selected,  
a different set of fields is displayed within the edit properties  
dialog box. The fields map to the format of the Address Book  
that is selected. The user has the ability thereafter to switch  
Address Books on-the-fly, by selecting the appropriate Address  
30 Book from the selection box as shown in FIG. 16A.

In one embodiment, the code that provides support for each  
Address Book is created as a plugin, allowing users to only  
download the Address Books that they want support for. The  
install routine provides a means by which users can select which  
35 Address Books are downloaded, and automate the installation of

1 the plugin. Support is provided for importing other address  
data. For example, the system provides import filters for the  
following: Daytimers, The Learning Channel products, MYOB, and  
the like. Also, Address Books support standard group  
5 capabilities. The system is capable of providing support for  
foreign addresses, and is able to pass AMS matching checks.  
Furthermore, the system provides the capability to print  
addresses that have been returned by AMS in a format that  
includes both upper and lower cased alpha characters. In other  
10 words, the address that is printed should preferably have the  
same formatting of upper and lower case characters as the user  
originally entered. When multiple recipients are selected from  
the Address Book, the dialog box shown in FIG. 16B appears to  
educate the user about multiple recipient selection. Selecting  
15 Ok closes the dialog box and returns the user to the Print  
Postage dialog box. If the user selects the check box (which is  
unselected by default), this dialog box will not appear again in  
the future.

The Address Book within the client provides a utility to  
import text files that have been exported from other Address  
Books. Typically, when a user imports a text file, the user need  
to "map" the fields from the original file into the fields of the  
destination file. This is very cumbersome for the user, and  
often prevents users from successfully importing files. To avoid  
20 forcing the user to map fields, the system provides import  
"filters," that are unique filters written for each Address Book.  
Since each filter is unique to an individual source file, the  
filter knows the data field structure of the source file (and it  
knows the data structure of the destination system Address Book).  
25 With this knowledge, the import filter is able to import files  
from other Address Books without requiring any data structure  
input from the customer. To meet the brandability needs, the  
system accommodates an easy addition of import filters.

The system also provides a flexible messaging system, which  
35 includes a communication channel between the provider and its



1 users through the client software. Messages may be created by  
various departments within the provider's organization and are  
pushed by the server to one of several types of messaging dialog  
boxes. Some examples of messaging dialog boxes are described in  
5 detail below.

FIG. 17A is an exemplary message dialog box. The graphic  
indicates the message category, the Text box displays characters  
of text in a non-editable text box, the URL Link button is  
dynamic and is available only when a URL address is included with  
10 the messages, and the OK button closes the dialog box. If  
applicable, selection of the OK button also executes a function  
(see specific cases, below). For client / server communications,  
the server is able to assign a message to any of the following:  
Individual users, all users, and a group of users (defined by any  
15 attribute that system stores). The client checks the server for  
messages awaiting the individual user at login. If a message is  
found for the individual user, the server sends the following  
information down to the client: Message type, Message Text, and  
URL link. In addition, if the message type is "payment" the  
20 following information are also sent: date of payment rejection,  
type of payment for payment rejection, account for payment  
rejection, and amount of payment rejection.

In the event that a message is awaiting a user at the time  
of login, the client displays one of several types of messaging  
dialog boxes. The specifics of the dialog box that is displayed  
is dependent upon the "Message Type" that awaits the user.  
Generally speaking, the types of messages available fall into one  
of two categories: generic or template. The generic message type  
includes marketing messages, customer support messages, etc,  
25 where the intent of the messaging is simply to communicate with  
the user and perhaps provide a URL link. The template message  
types include payment resubmission, email resubmission, and plan  
change notifications, where in addition to sending a message to  
the user the messaging dialog box allows the user to take action  
30 on the message. In one embodiment, template dialogs are hard

1 coded into the client system to accommodate the special actions  
that are taken. Marketing Messages allow the provider to  
communicate with the user base. For example, the Marketing  
Message dialog box allows the provider to promote an item that  
5 is sold on their web site, and provide a URL link to that item.  
An example of the specific components of a marketing message are  
shown in FIG. 17B. In the Icon graphic, a generic Marketing  
Message icon appears. The text for Text box is customizable at  
the server. If the provider wants to associate a URL with the  
10 message, a URL link button named "More Info..." appears. The OK  
button closes the dialog box.

A Customer Service Message is preferably the same in  
functionality as the Marketing Message dialog box, except that  
the graphic icon is different. The different graphic  
15 communicates to the user that this message is a different type  
of message than a Marketing Message. The Customer Service dialog  
is designed to communicate customer support issues, as shown in  
FIG. 17C. A Credit Card Promotion message type, as shown in FIG.  
17D allows the provider to broadcast credit card promotions to  
20 the users. The graphic icon communicates the message type to the  
user. In one embodiment, this graphic includes the MasterCard  
logo. The text on the URL link button reads "Apply Now". FIG.  
17E is an exemplary dialog box for Payment Resubmission Message.  
The Payment Resubmission Message is a template type of message.  
25 The purpose of this template message box is to convey to a user  
that a payment has been rejected, and facilitate a payment  
resubmission by the user. As illustrated in FIG. 17E, a Payment  
Message icon appears in the icon graphic. The Text box is  
dynamic, explaining the details of the failed transaction. The  
30 end of the message typically reads "Select OK to resubmit your  
payment," and the OK button closes the dialog box and launches  
the purchase postage screen.

Email Resubmission Message is a template type message, whose  
purpose is to notify a user when the system does not have a valid  
35 email address for him/her, and enable the user to provide this

1 information. Exemplary elements of this type of message dialog  
are shown in FIG. 17F. An Email Message icon appears in the icon  
graphic. The text for the Text box is static and the contents  
of the text box are shown in the graphic. An Email edit box  
5 allows the user to enter an email address, and the OK button  
closes the dialog box, and sends the user's email address to the  
server.

10 A Change in Service Plans Message (also a template type  
message), indicates when new plans are available to a user, or  
if the user's current plan is going to be grandfathered. This  
message dialog basically indicates the change to the user and  
links the user to the change plans dialog and to more information  
about change plans, if desired. Exemplary elements of this  
15 dialog are shown in FIG. 17G. As shown, a Service Plans Message  
icon appears in the icon graphic. The text for the Text box is  
dynamic, and displays the plan changes. This text ends with the  
text string "Select 'OK' to view the new plan, or cancel to  
continue. The OK button closes the dialog box, and opens the  
Change Service Plans dialog box. The Cancel button closes the  
20 dialog box without opening the Change Service Plans dialog box.  
A Message Log is created to list a history of the messages that  
a user has received. This log is accessible from the "Accounts"  
screen, and have the standard layout and capabilities of the  
other logs within the client.

25 The client software checks for available updates at the  
beginning of the installation routine, before any files have been  
installed, and at each login. At each of these times, the client  
checks for an available update. If an update is available, a  
dialog box appears. This dialog box provides a message which  
30 communicates the details of the available update, and provides  
a URL link to a website where the update file can be downloaded.  
The update file may be classified as either mandatory or  
optional. If the update is mandatory, the update is installed  
by the user. If the update is optional, the user can choose  
35 whether or not to install the file. There are no restrictions

1 regarding how many update messages can be sent out, and the  
update message is not tied into the standard messaging described  
earlier in this document. The auto update feature is able to  
copy individual files so that a version can be updated without  
5 requiring a complete update.

In one embodiment, the system includes OEM branding  
capabilities. The system allows for the customization of the  
installation script in several ways, including the option of  
running a silent install, defining a default installation  
10 directory, and defining a default installation group. The  
default behavior of the installation routine is to run as an  
application that is visible to the user, and requires user input  
on multiple screens during the installation process. The system  
provides the option of a "silent install", which installs the  
15 program files to the user's system without being visible, and  
without requiring user intervention. The installer is told where  
to install the product's files. While the user may choose to  
install the product in any directory location they want, the  
installer offers them a choice consistent with the product  
20 identity. Every product is placed in a sub-directory within the  
master directory. The OEM partner has the ability to provide a  
name for both the master directory and sub-directory into which  
the product is installed. Program group, or "folder", is the  
location in which the installer displays the product if the user  
25 does not manually choose a different one. The system allows the  
OEM partner to customize the Default Program Group name. The OEM  
partner does not have the ability, however, to change the name  
or associated icons of the items within the group.

The system provides the ability to co-brand the software by  
30 providing prominent partner logo placement on the main screen  
within the software. In one embodiment, the logo placement is  
in the upper left hand corner of the main screen, below the  
provider's logo. An example of the layout of the provider's logo  
and the partner logo are shown in FIG. 18. The client software  
35 provides URL links which can be defined by the OEM partner.

1 Specifically, the client software allows URL links to be  
embedded within two areas of the main client screen, the  
provider's logo in the upper left hand corner of the main screen,  
and the partner logo on the main screen. The system also  
5 provides a space within the postal indicium that is designated  
to display a logo or slogan of the OEM partner.

The system incorporates client server technology which  
enables the provider to provide OEM partners with data that  
tracks the postage usage of customers who are using that OEM's  
10 version of the client software. The client software embeds a  
unique OEM identifier within each OEM version of the client  
software. Once a user has registered with the provider, that  
user is thereafter associated with the OEM that is identified  
within their client software. This association, as well as all  
15 tracking activities, are transparent to the user and require no  
additional intervention by the user. In the event that a user  
gets the client software through an Affiliate Partner's web site,  
the account number that a user is assigned will embed in it  
information that identifies the source Affiliate Partner.  
20 Therefore, this account number is uploaded to the Postal Server,  
which occurs at the end of the Registration wizard. In the case  
of an affiliate partnership, the tracking number is extracted  
from a cookie that has been downloaded onto the users computer.  
The details concerning formatting and requirements of the cookies  
25 are covered in a separate document.

A change of Address wizard is designed to help a user  
through the process of changing either a physical or mailing  
address, and the meter license ramifications that may result.  
An exemplary process flow of the Change of Address wizard is  
30 shown in FIG. 19A. In block 1901, the Change of Address Screen  
#1 serves the purpose of welcoming the user to the wizard using  
the text as shown in FIG. 19B. Selecting "Next>" advances the  
user to the next screen of the wizard. In block 1902, the Change  
of Address Screen #2 allows the user to enter a new mailing  
35 address and/or physical address. As shown in FIG. 19C, the

1 controls used are the same as are used in the Addresses screen  
of the Getting Started wizard. The only difference is in the  
introductory text. The client checks for a PO Box in the  
physical address fields. If a PO Box is provided, the error  
5 message indicates that a PO Box is not acceptable. These fields  
are preferably pre populated by default. In blocks 1903 and  
1904, addresses are checked and in block 1905, the Change of  
Address Screen #23, shown in FIG. 19D, appears. This screen  
preferably serves the same purpose as the Submit screen of the  
10 Registration Wizard, and preferably uses the same controls. One  
difference is that in this case, the only information that is  
populated is the address information that is provided in screen  
#2.

15 Change of Address Screen #4, shown in FIG. 19E appears when  
a change in the meter license is not required (i.e. if the  
physical address hasn't changed or if the physical address hasn't  
resulted in a changed LPO), as shown in blocks 1906 and 1907.  
In this event, in block 1910, the server submits a 3601C form,  
and this screen appears to let the user know that the address has  
20 been successfully changed. The Change of Address Screen #5  
(shown in FIG. 19F) educates the user about the process that  
needs to be undertaken in order to withdraw and reapply for a  
meter license. Selecting "Next>" prompts the user with a warning  
dialog box, as shown in FIG. 19G. If the user responses "Yes"  
25 to the warning, the meter is withdrawn, and "moved" is inserted  
into the reason for withdrawal on the 3601 C form (see block  
1913), and the mailing address that is provided at the beginning  
of this wizard is used for the mailing of the refund check. This  
withdrawal should not result in a "slot" becoming available for  
30 a brand new user, as this user will re-register momentarily and  
take the "slot" again. If the user enters "no", the wizard is  
canceled.

Change of Address Screen #6 notifies the user that their  
meter license has been withdrawn. In addition, it prompts the  
35 user for a new user name and password. The controls used for

1 this screen, shown in FIG. 19H, are the same as those used in the  
user name screen of the Getting Started wizard. The client  
verifies with the server that the user name is unique. The  
client also verifies that the password meets the preferred basic  
5 criterion for example, of 6 characters minimum, with at least 1  
alphabetic character and 1 numeric character. Change of Address  
Screen #7 (shown in FIG. 19I) lets the user know that the final  
step is to go through the Registration Wizard. Selecting "Next>"  
launches the Registration wizard with all known fields being pre  
10 populated. In addition, the wizard preferably should not check  
for an available "slot", since the users are just using their  
existing "slot".

In one embodiment, the system includes a dialog box, which  
can change payment methods and be accessed from the Account  
15 screen. An exemplary interface for this screen is illustrated  
in FIG. 20A. This screen preferably has the same functionality  
as the Select Payment Method screen of the Getting Started  
wizard, but formatted into a dialog box format. This dialog box  
is dynamic. The Select Payment Method screen of the Getting  
20 Started wizard is also dynamic. When the user first sees the  
dialog box, the only control that is available prompts the user  
for a Payment Type (i.e. Visa, MasterCard, American Express,  
ACH). If the user selects any of the credit card types, the  
screen dynamically builds to add the additional controls that are  
25 required to extract credit card information, as shown in FIG.  
20B. These controls are described in the Getting Started wizard  
above. If the user selects ACH, then the screen builds  
dynamically to contain controls that extract the ACH information  
that is necessary in order for the provider to bill an account.  
30 The specifics on these controls are discussed within the Getting  
Started wizard above, and are integrated into the dialog box  
setting, as shown in FIG. 20C.

In one embodiment, the system allows the user to change the  
service plan in which the customer is participating. This is  
35 accomplished through several screens which have many of the

1 attributes of the Service Plan screens within the Getting Started  
wizard. This functionality is accessed when the user selects  
"Change Service Plan" from the Accounts screen. Once the user  
5 selects "Change Service Plan" from the Accounts screen, the  
Change Plan dialog box (shown in FIG. 21A) appears which has  
controls that are similar to those found on Service Screen #7 in  
the Getting Started wizard with one addition. Specifically, a  
line of text is added at the top of the screen that displays the  
10 name of the Service Plan that the user is currently signed up  
for. Once the user has selected "Ok" in the Change Plan dialog  
box, the Change Plan Contract dialog box, shown in FIG. 21B,  
appears. This dialog box preferably uses the same controls as  
screen #8 in the Getting Started wizard (described above), and  
displays the contract for the new service plan that the user has  
15 selected.

If the user selects the "I Accept" radio button on the  
Change Plan Contract dialog box, and then selects "Ok", the  
dialog box shown in FIG. 21C appears. The purpose of this dialog  
box is to communicate to the user when the change will come into  
20 effect. Selecting "Ok" completes the Change of Service Plan  
process. If the user selects the "I do NOT Accept" radio button  
on the Change Plan Contract dialog box, and then selects "Ok",  
the dialog box of FIG. 21D appears. This dialog box provides a  
warning to the user that unless the contract is accepted, the  
25 service plan will not be changed. If the user selects the "Go  
Back" button, this dialog preferably closes and the Change Plan  
Contract dialog should appear again. If the user selects the  
"Cancel" button, the change of plans process is canceled.

FIG. 21E depicts a dialog box that allows users to inform  
30 the provider when their email account names have been changed.  
This dialog box is accessible from the Account screen. The edit  
box control on this screen allows the user to enter a new email  
address. If the user enters an address and selects OK, the  
client uploads the new email address to the server. If the user  
35 selects Cancel, the operation is canceled. A Change Password



1 option in the Account Screen is provided. The dialog box that  
is launched from this option is updated to reflect the password  
functionality as defined in the Getting Started wizard. In one  
5 embodiment, the password screen requires a new password type. The  
preferred requirements for the new password type are that the  
password be at least 6 characters in length, have at least 1  
alpha character, and at least 1 numeric character. A password  
recovery function allows a user to get a new password in the  
10 event that it is forgotten. This process does not require the  
user to interface with Customer Service. This process relies  
upon the secret code or key word phrase that the user provided  
in Service Screen #4 of the Getting Started (at the end of the  
Getting Started wizard, this keyword is uploaded to the server  
and stored as part of the user's personal profile).

15 The initial login screen provides the interface whereby the  
users typically inputs their passwords. If a user enters  
incorrect information, a message such as the one shown in FIG.  
22A appears. As an added measure of security, if the user enters  
incorrect information ten times, the system keeps showing the  
20 user the above message even if the user enters the correct  
information. The user is forced to close and re-open the client  
to try again (although they won't know this) or contact Customer  
Support. If the user enters the information correctly, the  
confirmation message shown in FIG. 22B is displayed. The "OK"  
25 button closes the client. If the user never receives the email  
or the letter, they preferably have to repeat the process to have  
a new password sent out. The Customer Support (CS) Manager is  
able to modify the text of the Reset Sample email by going  
through normal operational email update procedures.

30 Once the user gets the temporary password, the user uses it  
to log in as normal. Once the server verifies that the password  
is valid, an additional check is made to determine whether the  
password that is provided is a temporary or long term password.  
If the password is a temporary password, then the client software  
35 launches the change password dialog box, and does not allow the

1 box to be closed until the user enters the old password and a new  
one. A Message Log lists a history of the messages that a user  
has received from the provider. This log is accessible from the  
"Accounts" screen, and have the standard layout and capabilities  
5 of the other logs within the client.

FIG. 23 is an exemplary interface for a Withdraw Meter  
dialog box. Reason for withdrawal combo box allows the user to  
select a reason why he/she is withdrawing the meter. The user  
can type in their own response or select from any of the  
10 following standard responses; too expensive, difficulty  
connecting, too much lost postage due to printing mistake, no  
support for windowed or pre-addressed envelope, incompatibility  
with other software, requires printing of address and 'stamp'  
together, no longer have significant mail volume, poor customer  
15 support, and the like. Future Products used combo box helps  
better understand why customers are terminating the provider's  
service. Specifically, this control allows the user to indicate  
what postal solution he/she will use in the future. The user can  
type in a response or select from the following: regular stamps,  
20 postage meter, or alternative Internet Postage product. A prompt  
appears in the combo box that reads "<type in or select one>",  
if the user chooses to type in a response. Address fields define  
where the refund check will go. These fields are pre-populated  
with the user's mailing address, but the user can make any  
25 desired changes to the address. Once all of these fields are  
filled in, selecting the OK button submits a request to withdraw  
a meter to the server. The server processes the appropriate  
withdrawal forms to the USPS on the user's behalf.

A Postal Meter License wizard is also provided. This option  
30 within the Options screen launches the new Registration wizard  
(which is a subset of the Getting Started wizard). The specific  
screens that make up the Registration wizard are shown in the  
process flow of FIG. 24. The screens numbers in the process flow  
of FIG. 24 refer to screens of FIGs. 10B-100 of the Getting  
35 Started wizard portion of this document. In order to change an

1 address, the user selects the Change of Address wizard.

5 A Setup Digital Scales option is also provided. This new option launches the Setup Digital Scale dialog box shown in FIG. 25A. This dialog box is used to select and configure digital scales. In this dialog box, Select a Scale combo box allows the user to select from a list of supported digital scales. This list checks for all scales that are supported, such as the Weightronics™ digital scale. Select COM port combo box allows the user to select which COM port the digital scale is attached to. The list includes all of COM ports on the user's system. Web Link button links the user to provider's site. The test button runs a test to make sure that the communication to the selected scale on the selected COM port is functional. If the test successfully communicates with the scale, the dialog shown in FIG 25B appears. If the test is unsuccessful, the dialog box shown in FIG. 25C appears. The system supports the calculation of postal rates based upon zones. As a result, the system is able to support Express and Priority mailings. The implications of zone based postage are discussed in the printing section of this document.

25 Every "View History" dialog box adds print functionality, so that historical reports can be printed. Specifically, the View Postage Purchase History, View Postage Printed History, and View Messages History all add a Print button at the bottom of the screen. The number of events that are printed is defined by the purge control, which also controls the number of items that are displayed.

30 It will be recognized by those skilled in the art that various modifications may be made to the illustrated and other embodiments of the invention described above, without departing from the broad inventive scope thereof. It will be understood therefore that the invention is not limited to the particular embodiments or arrangements disclosed, but is rather intended to cover any changes, adaptations or modifications which are within the scope and spirit of the invention as defined by the appended

1       claims.

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1 WHAT IS CLAIMED IS:

1. An on-line system for printing a value bearing item (VBI) comprising:

5 a client subsystem for interfacing with a user comprising;

a graphical user interface (GUI) for installing software for printing the VBI;

a GUI for registering the user in the system; and

10 a GUI for managing the printing of the VBI; and

a server subsystem capable of communicating with the client subsystem over a computer network for authorizing the client subsystem to print the VBI.

15 2. The system of claim 1, wherein the VBI bears postage value.

3. The system of claim 1, wherein the VBI is a ticket.

20 4. The system of claim 1, wherein the VBI is one or more of a coupon, a currency, a voucher, and a check.

5. The system of claim 1, wherein the client subsystem further comprises a GUI for specifying a payment method.

25 6. The system of claim 1, wherein the client subsystem further comprises a GUI for making changes to the user's information.

30 7. The system of claim 1, wherein the client subsystem further comprises a GUI for displaying the user information including an account information.

35 8. The system of claim 7, wherein the account information includes an amount of credit left in the account.

1           9. The system of claim 1, wherein the client subsystem  
further comprises a GUI for specifying an address book from a  
plurality of address books so that the system can use the address  
book to print addresses.

5           10. The system of claim 1, wherein the client subsystem  
further comprises a GUI for entering a password so that the  
server subsystem can store the entered password and verify the  
password.

10           11. The system of claim 1, wherein the server subsystem  
includes an address matching module for verifying an address  
entered by the user.

15           12. The system of claim 1, wherein the GUI for installing  
software comprises of a GUI for the user to specify the type of  
connection to the computer network.

20           13. The system of claim 1, wherein the GUI for installing  
software comprises of a GUI for reporting error messages to the  
user.

25           14. The system of claim 1, wherein the GUI for installing  
software comprises of a GUI for canceling an installation  
process.

          15. The system of claim 1, wherein the GUI for registering  
the user comprises of a GUI for entering user information.

30           16. The system of claim 1, wherein the GUI for registering  
the user comprises of a GUI for offering the user a plurality of  
service plans and for selecting by the user a service plan of  
choice.

1           17. The system of claim 1, wherein the GUI for registering  
the user comprises of a GUI for reporting error messages to the  
user.

5           18. The system of claim 1, wherein the GUI for registering  
the user comprises of a GUI for canceling a registration process.

10           19. The system of claim 1, wherein the GUI for managing the  
printing comprises of a GUI for displaying a graphical image of  
the VBI.

15           20. The system of claim 1, wherein the GUI for managing the  
printing comprises of a first GUI for printing a quality  
assurance VBI.

20           21. The system of claim 20, further comprising a second GUI  
for displaying selectable choices of a printed quality assurance  
VBI.

25           22. The system of claim 1, wherein the GUI for managing the  
printing comprises of a GUI for troubleshooting selected printing  
options.

30           23. The system of claim 1, wherein the GUI for managing the  
printing comprises of a GUI for providing envelope options.

35           24. The system of claim 1, wherein the GUI for managing the  
printing comprises of a GUI for providing label options.

            25. The system of claim 1, wherein the GUI for managing the  
printing comprises of a GUI for providing postage options.

            26. The system of claim 1, wherein the GUI for managing the  
printing comprises of a GUI for reporting error messages to the  
user.

1           27. The system of claim 1, wherein the GUI for managing the  
printing comprises of a GUI for canceling a print process.

5           28. The system of claim 5 further comprising a GUI for  
displaying credit card information fields to be filed by the user  
when the user specifies a credit card for the payment method.

          29. An interactive online postage printing system  
comprising:

10           an installation wizard including a graphical user interface  
(GUI) for downloading and installing software for postage printing  
from a server connected to a computer network;

          a registration wizard including a GUI for facilitating the  
registration of a user with the system; and

15           a printing wizard including a GUI for facilitating printing  
of a postage indicium.

          30. The system of claim 29, wherein the registration wizard  
includes a GUI for specifying a payment method.

20           31. The system of claim 30 further comprising a GUI for  
displaying credit card information fields to be filled by the  
user.

25           32. The system of claim 29, wherein the registration wizard  
includes a GUI for making changes to the user's information.

30           33. The system of claim 29, wherein the registration wizard  
includes a GUI for displaying the user information including an  
account information.

          34. The system of claim 33, wherein the account information  
includes an account balance.



1           35. The system of claim 29, wherein the installation wizard includes a GUI for specifying an address book so that the system can use the address book to print addresses.

5           36. The system of claim 29, wherein the registration wizard includes a GUI for entering a password so that the server can store the entered password and verify the password.

10           37. The system of claim 29, wherein the server includes an address matching database for verifying an address entered by the user.

15           38. The system of claim 29, wherein the installation wizard includes a GUI for the user to specify the type of connection to the computer network.

            39. The system of claim 29, wherein the installation wizard includes a GUI for reporting error messages to the user.

20           40. The system of claim 29, wherein the installation wizard includes a GUI for canceling an installation process.

25           41. The system of claim 29, wherein the registration wizard includes a GUI for entering user information.

            42. The system of claim 29, wherein the registration wizard includes a GUI for offering the user a plurality of service plans and selecting by the user a service plan of choice.

30           43. The system of claim 29, wherein the registration wizard includes a GUI for reporting error messages to the user.

35           44. The system of claim 29, wherein the printing wizard includes a GUI for displaying a graphical image of a sample postage on an envelope.

1           45. The system of claim 29, wherein the printing wizard includes a first GUI for printing a quality assurance VBI.

5           46. The system of claim 45, further comprising a second GUI for displaying selection choices of the shape of a printed quality assurance postage sample.

10           47. The system of claim 29, wherein the printing wizard includes a GUI for troubleshooting selected printing options.

          48. The system of claim 29, wherein the printing wizard includes a GUI for providing envelope options.

15           49. The system of claim 29, wherein the printing wizard includes a GUI for providing label options.

          50. The system of claim 29, wherein the printing wizard includes a GUI for providing postage options.

20           51. The system of claim 29, wherein the printing wizard includes a GUI for reporting error messages to the user.

25           52. A method for printing a value bearing item (VBI) over a computer network having a client system and a server system, the method comprising the steps of:

          displaying a first GUI by the client system for registering a user;

          establishing communication with the server via the network;  
          entering user information in the first GUI; and  
30           communicating the entered user information to the server;

          53. The method of claim 52 further comprising the steps of:  
          displaying a second GUI by the client system including printing options for managing the printing of the VBI;

35           selecting one or more printing options from the second GUI;

1 and

printing the VBI according to the selected one or more printing options.

5 54. The method of claim 53, wherein the step of printing the VBI comprises printing a postage value.

55. The method of claim 53, wherein the step of printing the VBI comprises printing a ticket.

10 56. The method of claim 53, wherein the step of printing the VBI comprises printing one or more of a coupon, a currency, a voucher, and a check.

15 57. The method of claim 52 further comprising displaying a third GUI for installing software for printing the VBI.

20 58. The method of claim 52, wherein the step of displaying a first GUI comprises displaying a GUI for specifying a payment method.

25 59. The method of claim 52, wherein the step of displaying a first GUI comprises displaying a GUI for making changes to the user's information.

60. The method of claim 52, wherein the step of displaying a first GUI comprises displaying a GUI for displaying the user information including an account information.

30 61. The method of claim 60, wherein the account information includes an account balance.

35 62. The method of claim 52, further comprising the step of displaying a third GUI for specifying an address book so that the system can use the address book to print addresses.

1           63. The method of claim 52, further comprising the step of  
displaying a third GUI for entering a password so that the server  
system can store the entered password and verify the password.

5           64. The method of claim 52, further comprising the step of  
verifying an address by the server system entered by the user.

10           65. The method of claim 52, wherein the step of displaying  
a first GUI comprises displaying a GUI for offering the user a  
plurality of service plans and selecting by the user a service  
plan of choice.

15           66. The method of claim 52, wherein the step of displaying  
a first GUI comprises displaying a GUI for reporting error  
messages to the user.

20           67. The method of claim 52, wherein the step of displaying  
a first GUI comprises displaying a GUI for canceling a  
registration process.

25           68. The method of claim 53, wherein the step of displaying  
a second GUI comprises displaying a GUI for displaying a graphical  
image of the VBI.

30           69. The method of claim 53, wherein the step of displaying  
a second GUI comprises displaying a QA GUI for printing a quality  
assurance VBI.

35           70. The method of claim 69, further comprising displaying  
a third GUI for displaying selectable choices of the shape of a  
printed sample VBI.

          71. The method of claim 53, wherein the step of displaying  
a second GUI comprises displaying a GUI for troubleshooting  
selected printing options.

1           72. The method of claim 53, wherein the step of displaying  
a second GUI comprises displaying a GUI for providing envelope  
options.

5           73. The method of claim 53, wherein the step of displaying  
a second GUI comprises displaying a GUI for providing label  
options.

10           74. The method of claim 53, wherein the step of displaying  
a second GUI comprises displaying a GUI for providing postage  
options.

15           75. The method of claim 53, wherein the step of displaying  
a second GUI comprises displaying a GUI for reporting error  
messages to the user.

20           76. The method of claim 53, wherein the step of displaying  
a second GUI comprises displaying a GUI for canceling a print  
process.

25           77. The method of claim 52, further comprising the step of  
displaying a second GUI for the user to withdraw the user's  
account.

          78. The method of claim 52, further comprising the step of  
displaying a second GUI for communicating a message to the user.

          79. The method of claim 53, wherein the step of selecting  
one or more printing options comprises the steps of:

30           prompting the user to place an envelope in a printer;  
          displaying a plurality of patterns, wherein only one of the  
plurality of patterns completely prints onto the envelope fed  
through the printer;  
          selecting one of the plurality of displayed patterns based  
35           upon which pattern appears to the user; and

1           ascertaining if the printer feeds envelopes from the top,  
center, or bottom based on the selected pattern.

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## ONLINE VALUE BEARING ITEM PRINTING

## ABSTRACT

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An on-line VBI printing system that includes one or more cryptographic modules and a central database. The cryptographic modules are capable of implementing a variety of required security standards. A client system provides a user friendly GUI for facilitating the interface of the user to the system. The GUI system includes wizards that help the user step-by-step with processes of installation, registration, and printing

10

In one aspect, the invention describes an on-line system for printing a value bearing item (VBI) that includes a client system for interfacing with a user comprising; a GUI for installing software for printing the VBI; a GUI for registering the user in the system; and a GUI for managing the printing of the VBI; and a server system capable of communicating with the client system over a computer network for authorizing the client system to print the VBI.

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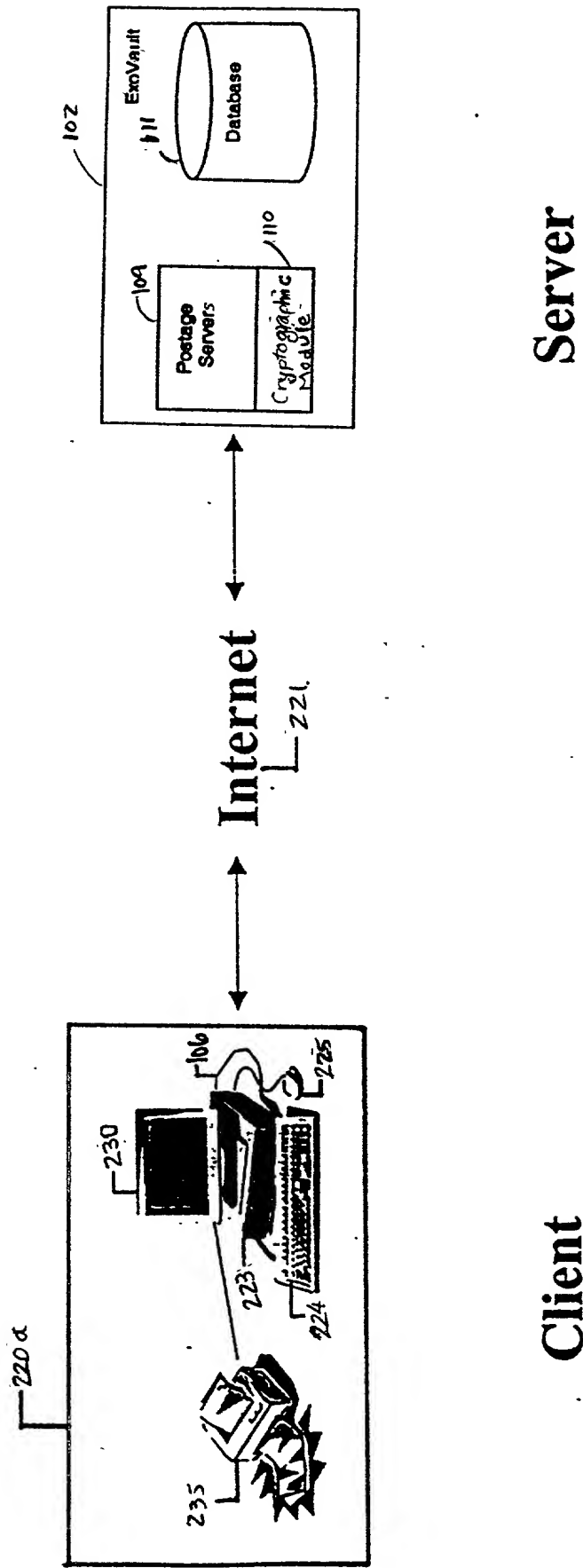
DSZ PAS251372.1-\*--6/1/00 1:54 PM

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FIG. 1

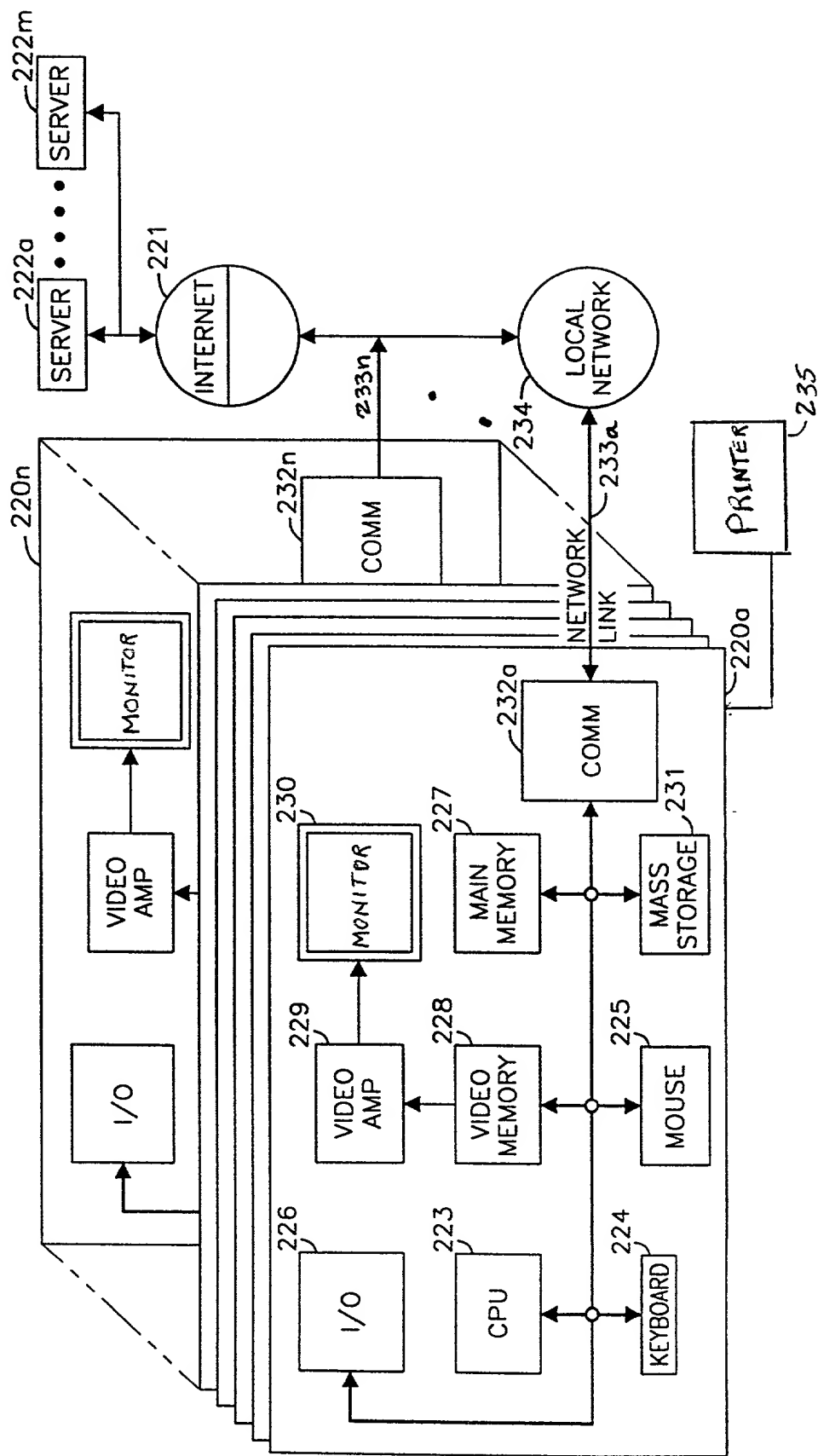


Server

Client



FIG. 2



# Install Wizard

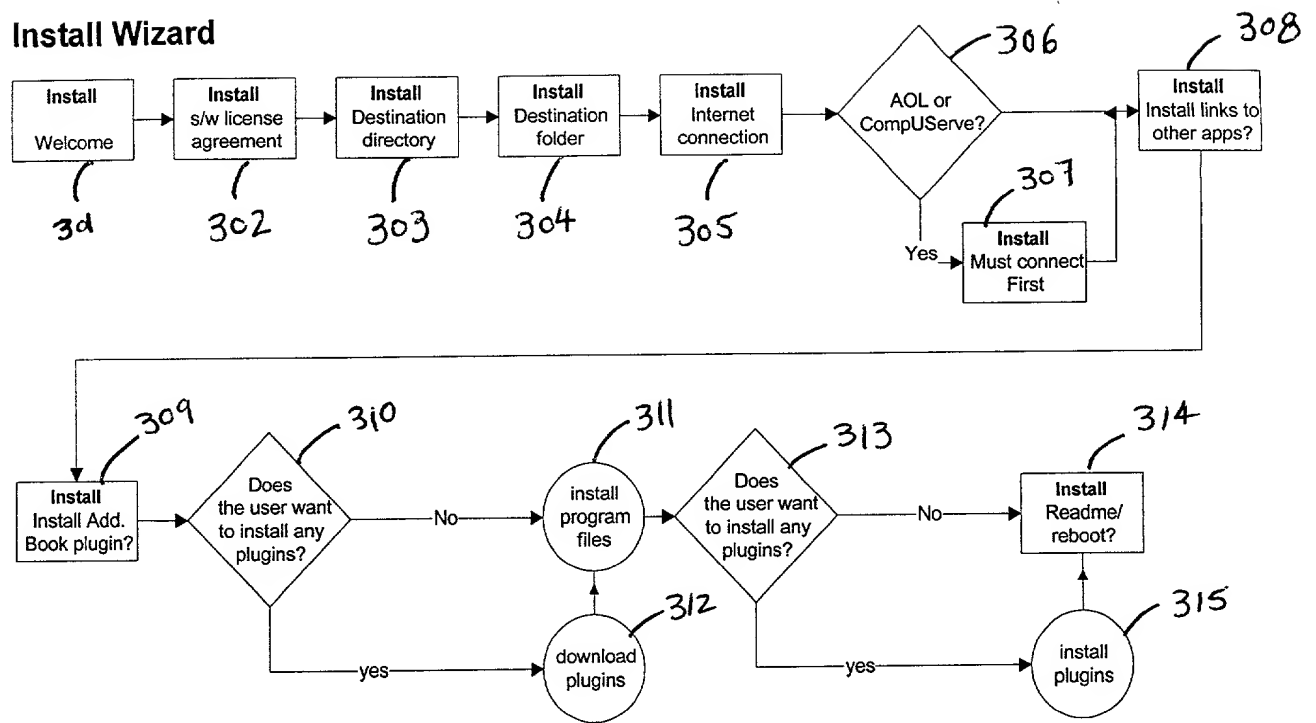


FIG. 3

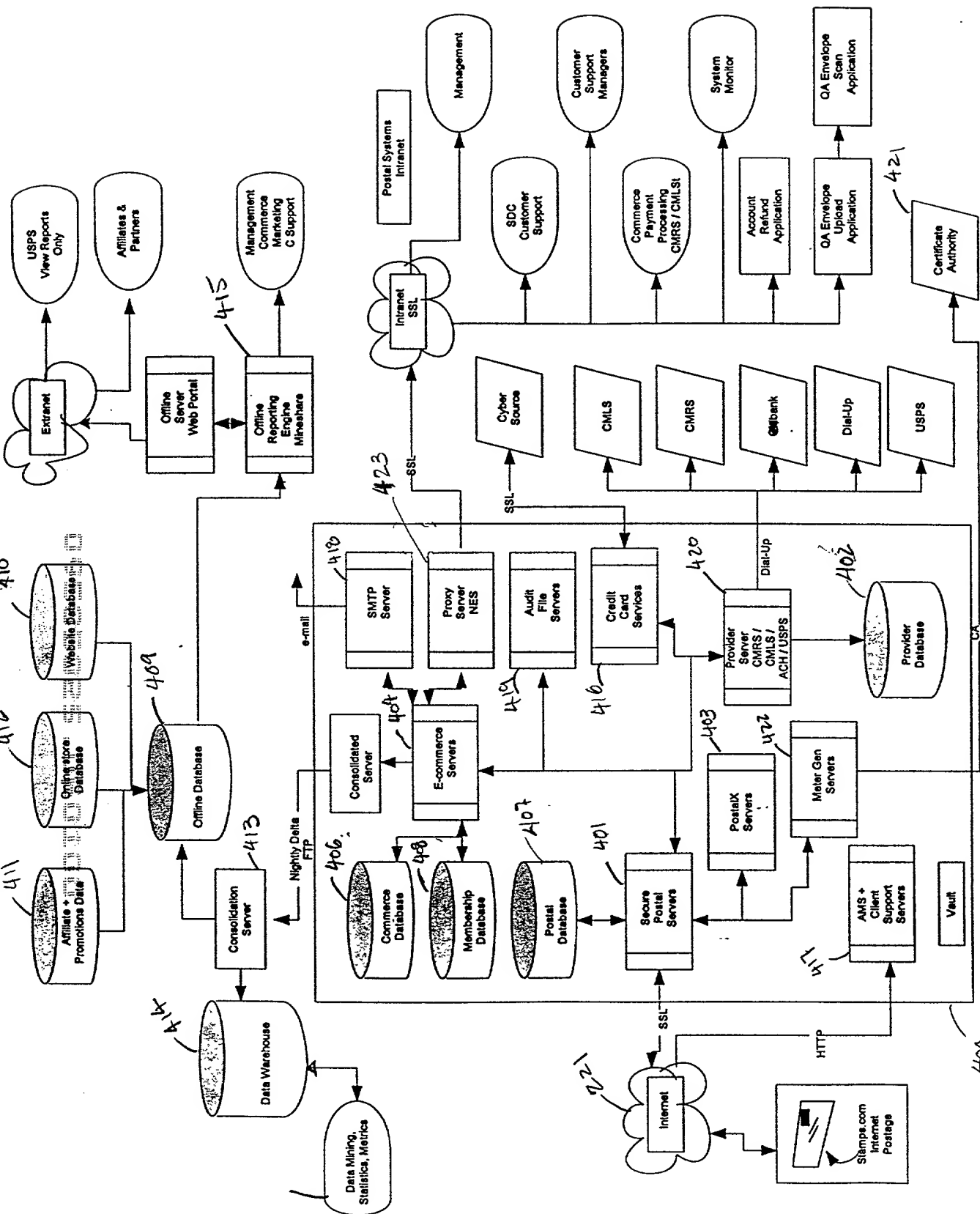


FIG. 4

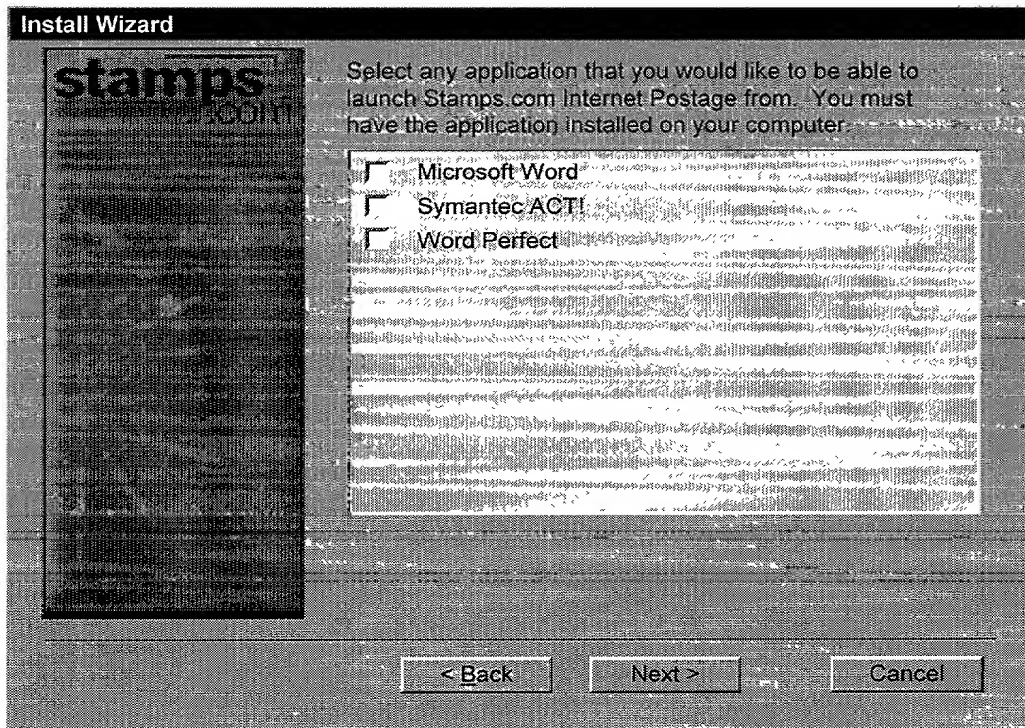


FIG.5A

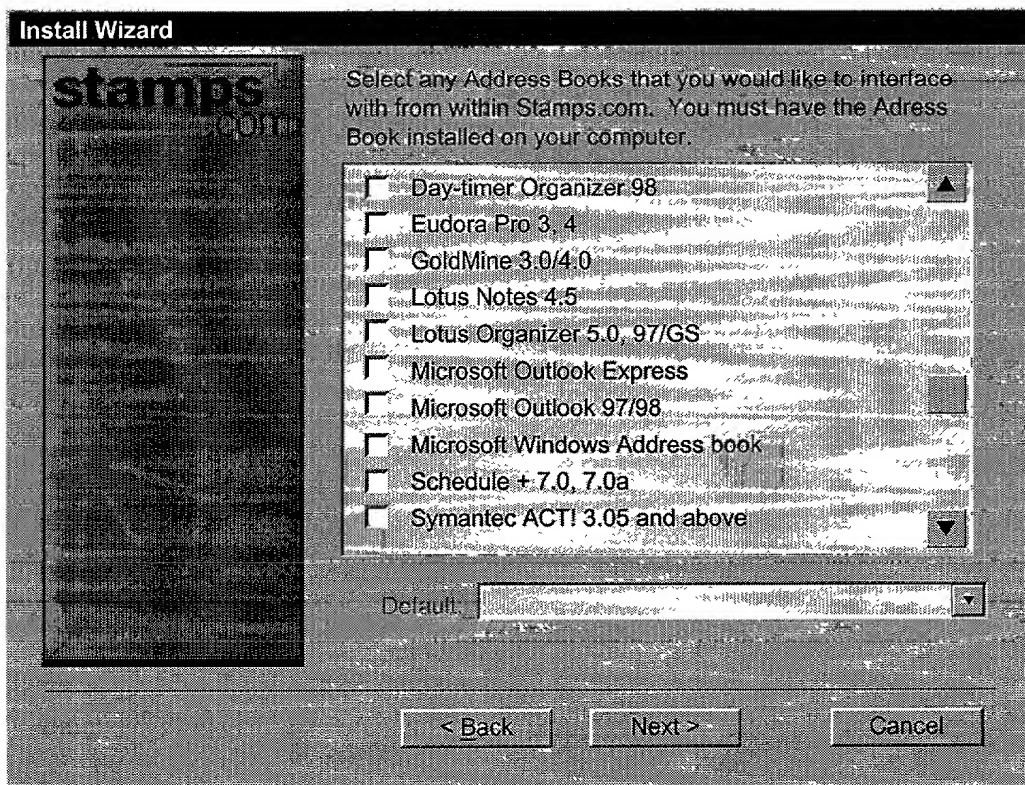


FIG.5B

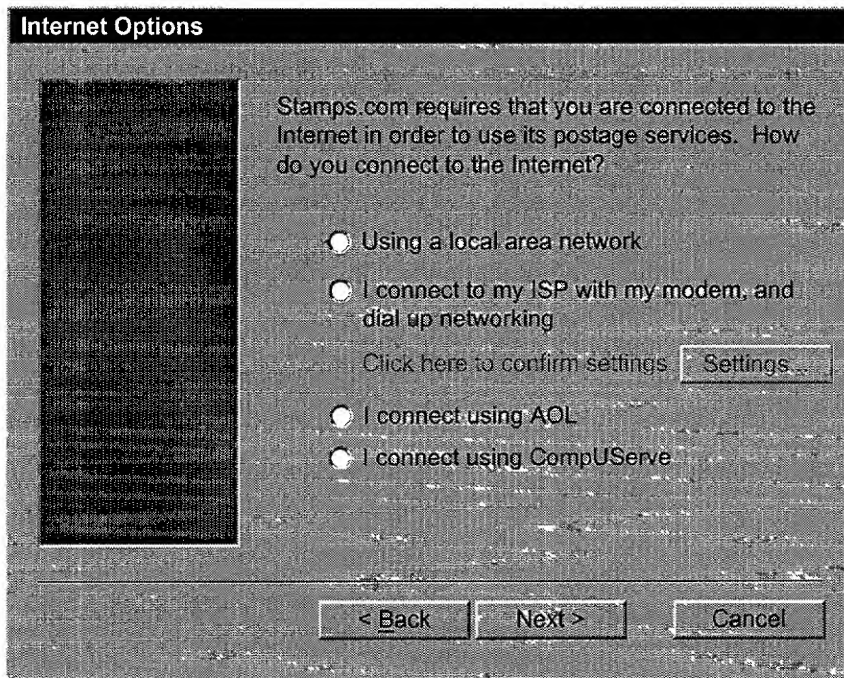


FIG. 6A

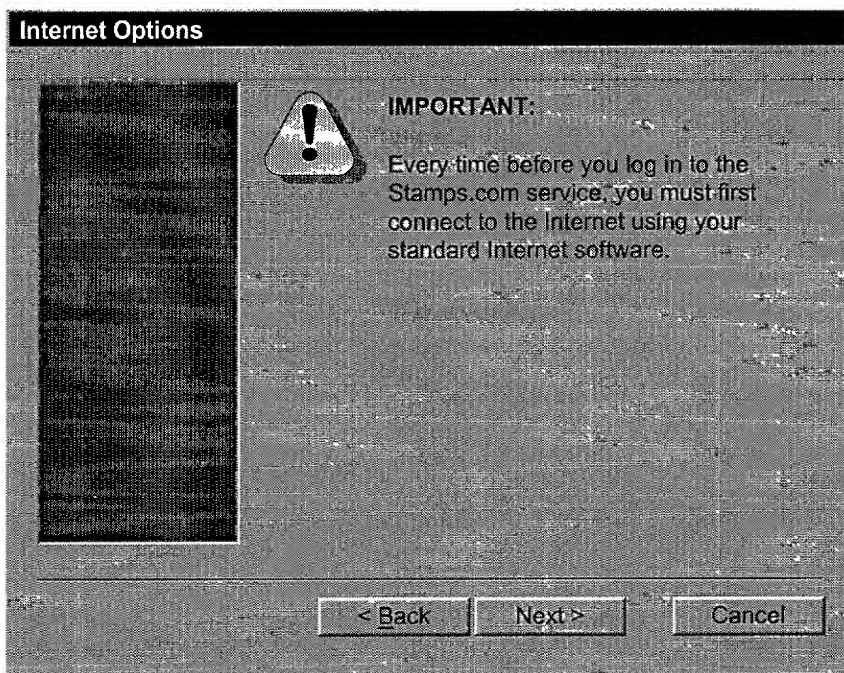


FIG. 6B

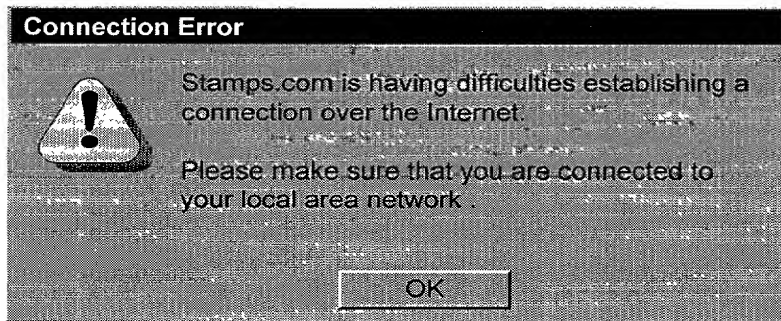


FIG.6C

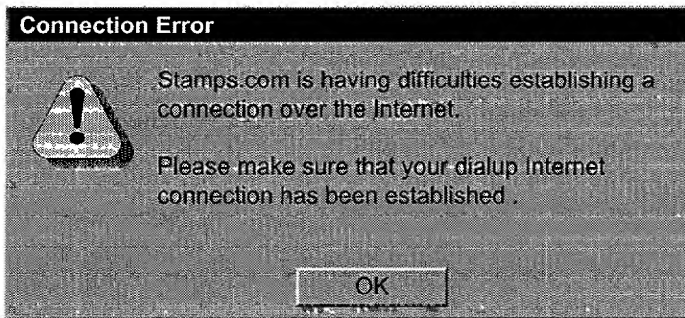


FIG.6D

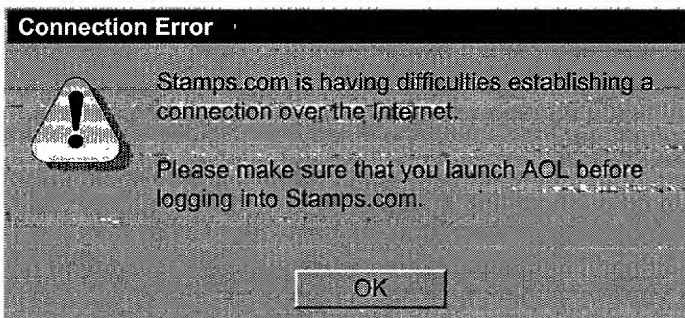
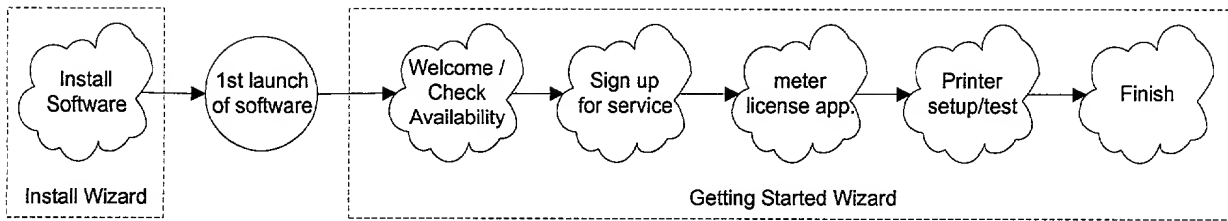
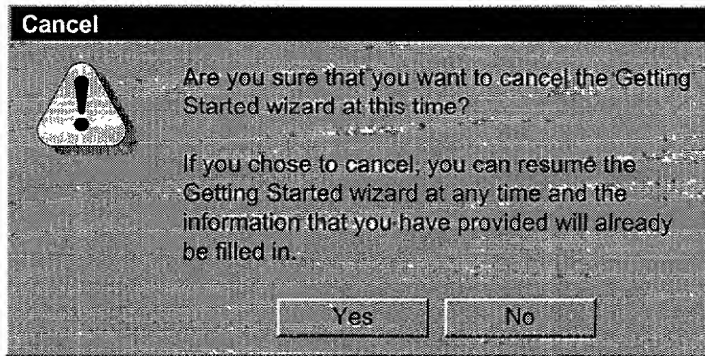


FIG.6E



**FIG.7A**



**FIG.7D**



# Getting Started Wizard - Welcome

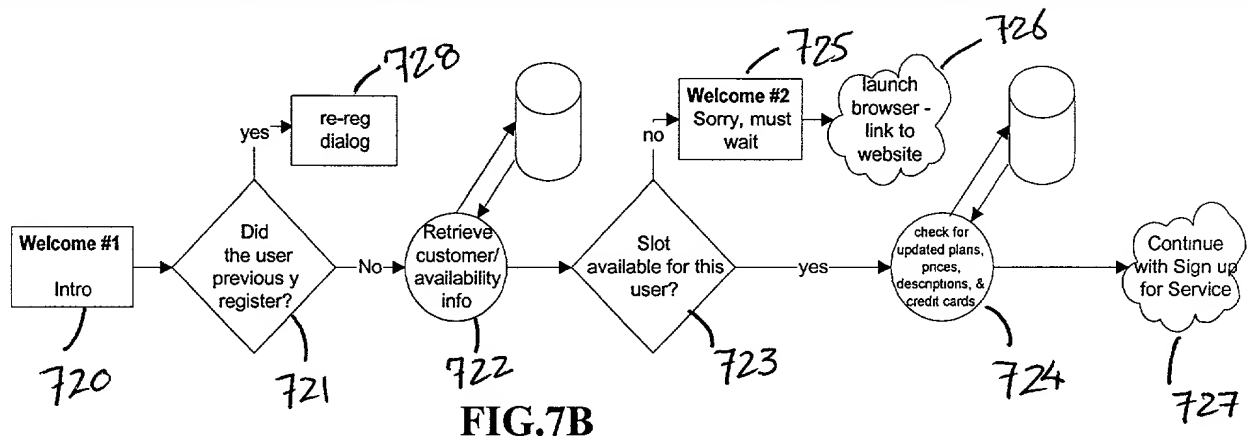
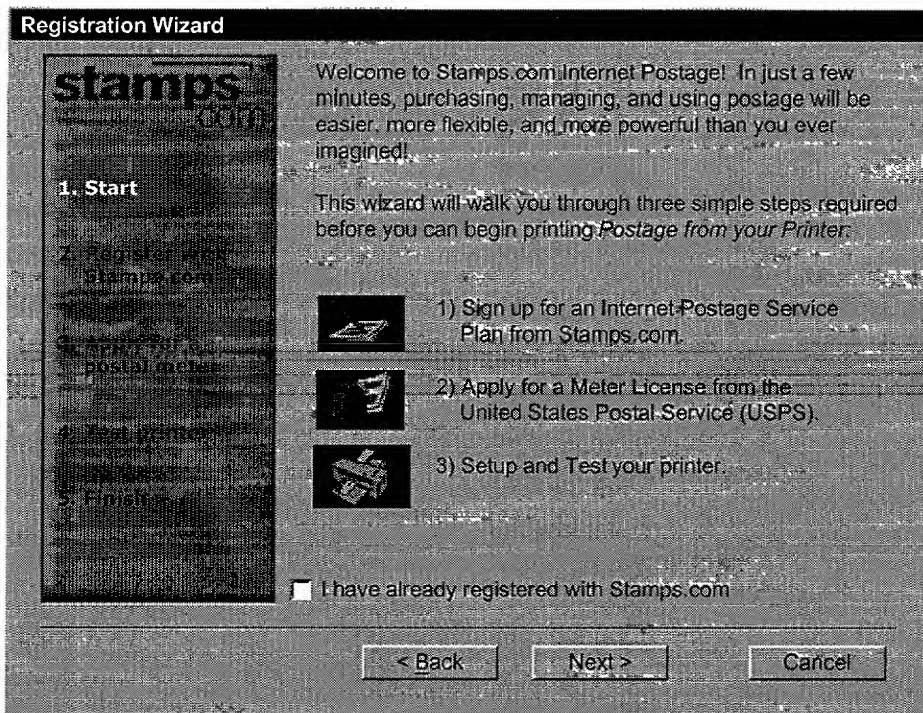


FIG.7B

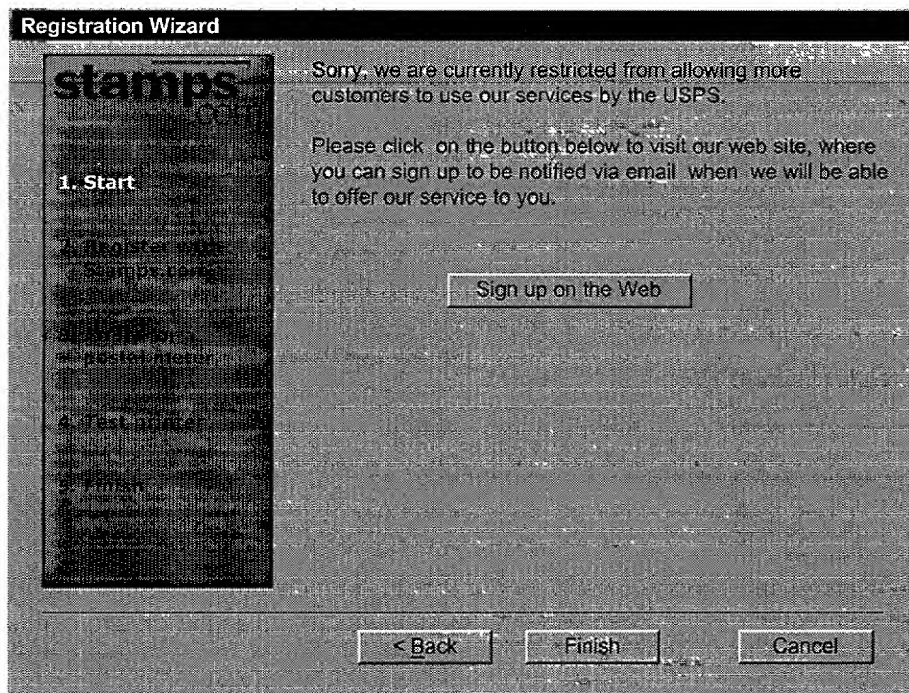






**Welcome #1**  
Intro 1


**FIG.8A**



**Welcome #2**  
Sorry, must wait

**FIG.8B**

**Registration Wizard**

**stamps.com**  **Service Sign Up**

First, you will need to register with Stamps.com and sign up for an Internet Postage Service Plan.

Please fill in the personal information on the following pages for use in this registration process.

First Name:  Middle Initial:

Last Name:

Phone:  Fax:

Email:


*Stamps.com will send all invoices via email, so please be sure this email account is one you check often.*

☒ Send me information about Stamps.com and its partners.

**Service #1**  
Personal info

**FIG. 9A**

**Registration Wizard**

**stamps.com**  **Service Sign Up**

Please enter the *physical address* where this computer is located.

Address:

City:

State:  Zip:

Please provide your *mailing address*.

☐ Use physical address

Address:

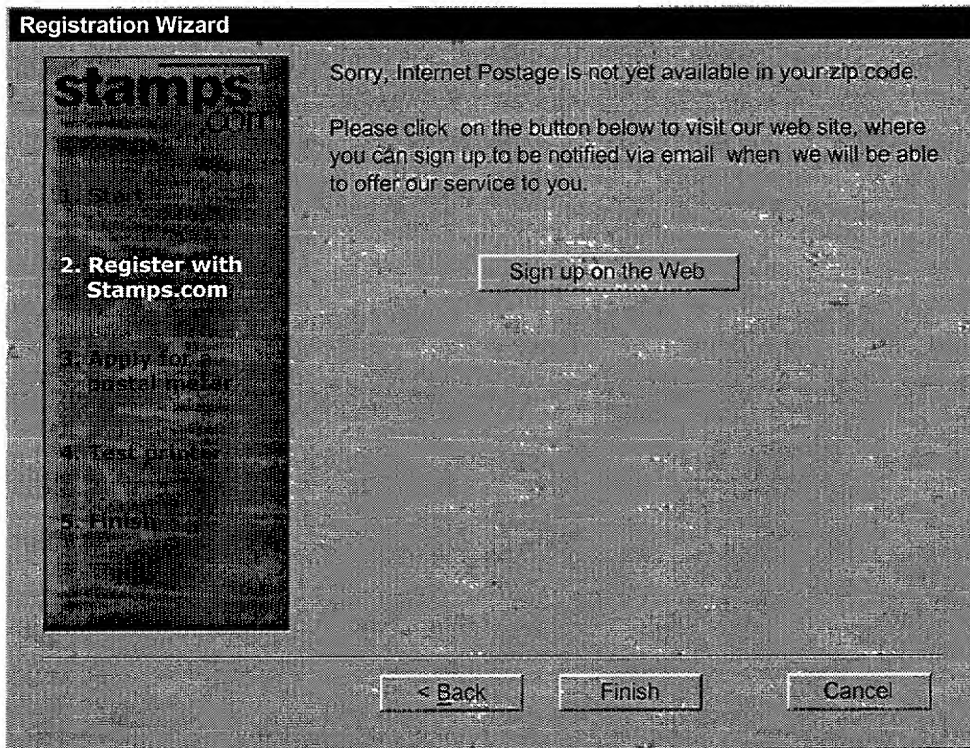
City:

State:  Zip:

**Service #2**  
Addresses

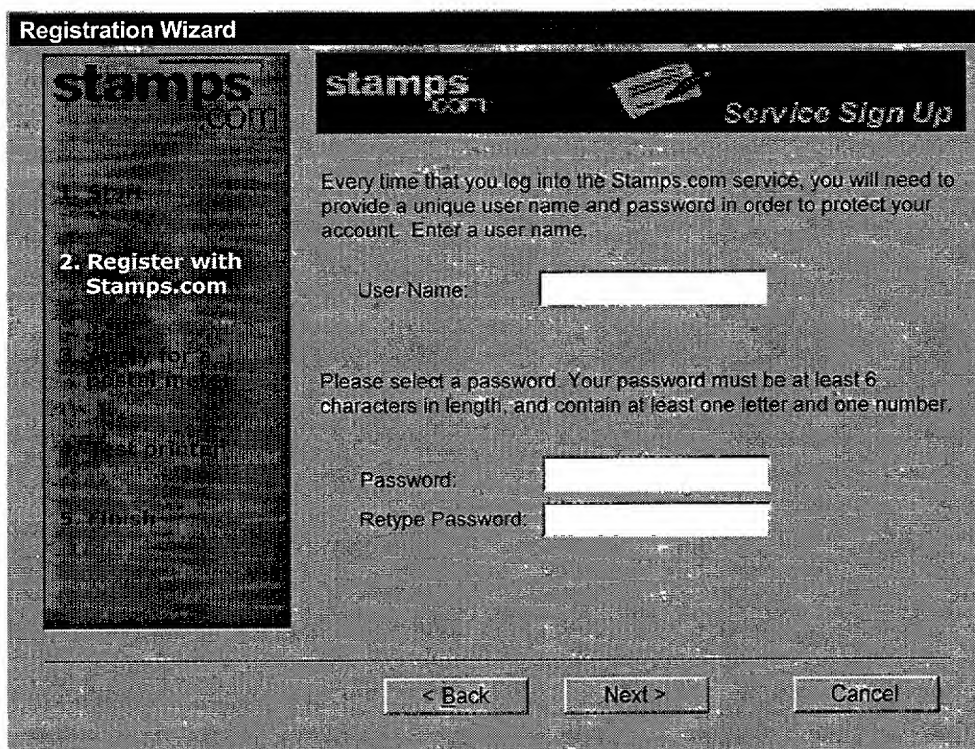
**FIG. 9B**





**Service #2a**  
Sorry, bad zip


**FIG. 9C**



**Service #3**  
User name/  
pass

**FIG. 9D**

**Registration Wizard**

**stamps.com**  **Service Sign Up**

**2. Register with Stamps.com**

Please select one of the questions below that only you would know the answer to, and then enter an answer in the form of either a word or phrase.

This secret code will be used to retrieve your password if you ever lose it.

Select a question:


Enter your secret code response:

< Back   Next >   Cancel

**Service #4**  
enter key  
word

**FIG. 9E**

**Registration Wizard**

**stamps.com**  **Service Sign Up**

**2. Register with Stamps.com**

In order to help Stamps.com better service your unique postage needs, please supply us with the following information.

Select which category best describes how you will use this service.

☒ Personal / Individual use  
☐ Home office (Corporate Work, Telecommuting)  
☐ Home-Based Business  
☐ Office-Based Business

Enter your company information below.

Company Name: \_\_\_\_\_

# of Employees: \_\_\_\_\_


Industry SIC Code: \_\_\_\_\_

< Back   Next >   Cancel

**Service #5**  
User cat/  
comp. info

**FIG. 9F**

**Registration Wizard**

**stamps.com**  **Service Sign Up**

On average, how much do you spend on postage each month?  
*(Postage includes USPS classes of mail - First Class, Priority, & Express - but does not include non-USPS overnight / package delivery services such as FedEx or UPS.)*

\$

Do you currently lease or rent a traditional postage meter?  
☐ Yes ☐ No

Estimate the percentage of each type of mail that you send.


<input type="text" value="100"/>	% Letters (standard envelopes)
<input type="text" value="0"/>	% Letters (window / preprinted envelopes)
<input type="text" value="0"/>	% Flats (magazines, unfolded letters)
<input type="text" value="0"/>	% Parcels (boxes)

< Back    Next >    Cancel

**Service #6**  
monthly  
usage

FIG. 9G

**Registration Wizard**

**stamps.com**  **Service Sign Up**

Stamps.com offers a variety of Internet Postage Service Plans from which you can choose. Each plan offers different benefits, and each has a different convenience fee structure.

Select a Service Plan

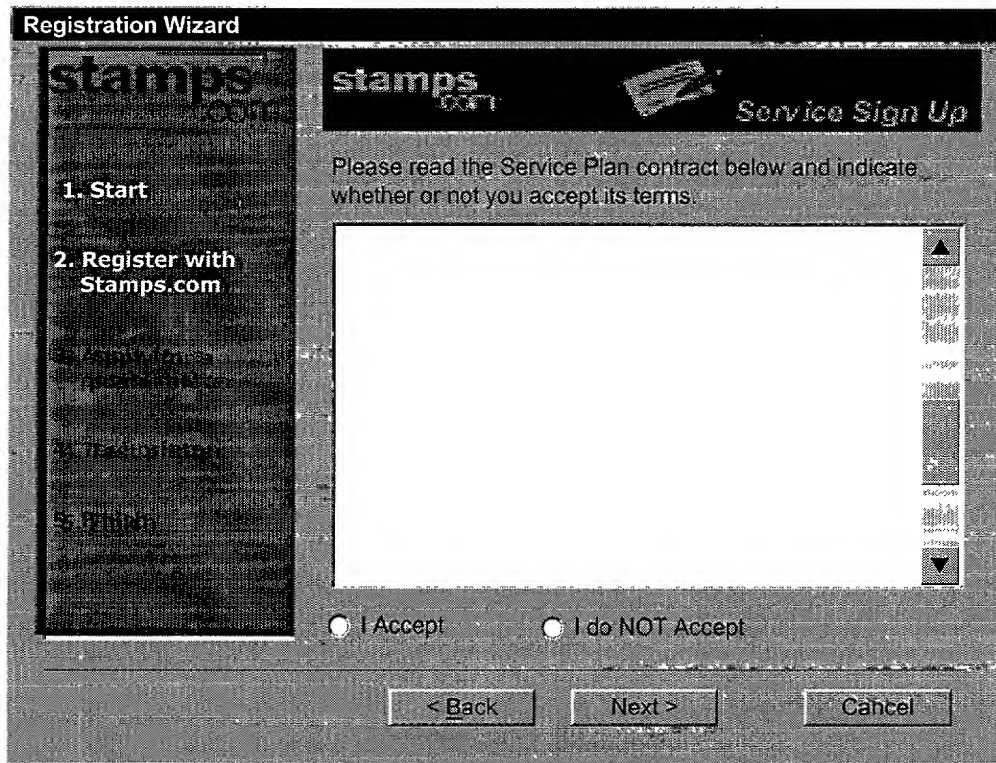
Service Plan Descriptions:

< Back    Next >    Cancel

**Service #7**  
Select plan

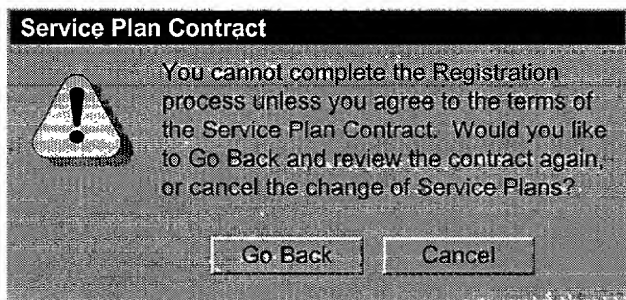
FIG. 9H





**Service #8**  
Srv Plan  
agreement

**FIG. 9I**



**FIG. 9J**

**Registration Wizard**

**2. Register with Stamps.com**

**Service Sign Up**

Please select a means of payment to be used for both the purchase of postage and for the payment of convenience fees.

Payment Type:

< Back    Next >    Cancel

**Service #9**  
payment info  
nothing selected  
mode

**FIG. 9K**

**Registration Wizard**

**2. Register with Stamps.com**

**Service Sign Up**

Please select a means of payment to be used for both the purchase of postage and for the payment of convenience fees.

Payment Type:

Cardholder Name:

Card #:

Exp. Date: month:  year:

Please provide your billing address for this account.

☐ Use Mailing address

Address:

City:

State:  Zip:

< Back    Next >    Cancel

**Service #9 a**  
payment info  
credit card  
selected mode

**FIG. 9L**



**Registration Wizard**

1. Start

**2. Register with Stamps.com**

3. Apply for a postal meter

4. Test printer

5. Finish

**Service Sign Up**

Please select a means of payment to be used for both the purchase of postage and for the payment of convenience fees

Payment Type:

Name on Acct:

ABA Routing #:

Account #:

Bank Name:

Account Type: ☐ Checking ☐ Savings

< Back    Next >    Cancel

FIG. 9M

**Service #9b**  
payment info  
ACH selected mode

**Registration Wizard**

1. Start

**2. Register with Stamps.com**

3. Apply for a postal meter

4. Test printer

5. Finish

**Service Sign Up**

Before you can begin printing postage, you need to have a balance of postage in your account

How much postage would you like to purchase at this time?

☐ \$ 10  
☐ \$ 25  
☐ \$ 50  
☐ \$ 100  
☐ \$ 200  
☐ Other

< Back    Next >    Cancel

FIG. 9N

**Service #10**  
purchase  
postage

# Getting Started Wizard - Registration Wizard component

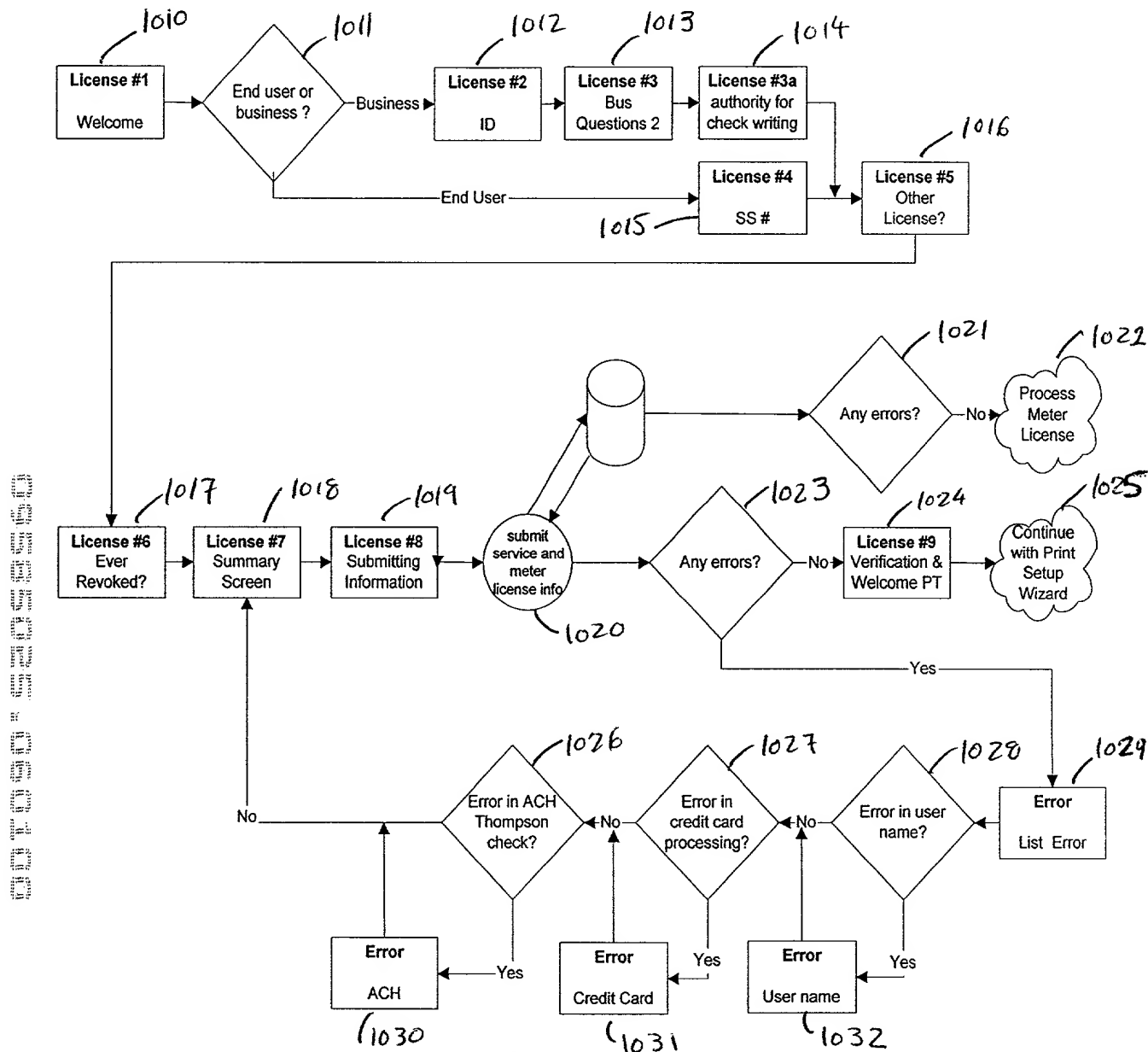


FIG. 10A

**Registration Wizard**

In the next step, this wizard will assist you in submitting a Meter License application with the USPS.

*This process generates an official USPS Meter License Application form and must therefore be responded to with complete accuracy.*

1. Start

2. Register with stamps.com

**3. Apply for a postal meter**

4. Verify meter

5. Finish

**License #1**  
Verification &  
Welcome ML

**FIG. 10B**

**Registration Wizard**

Enter a business identification number for your company. First, select a type of business identification number, and then enter that number for your company.

☒ Tax ID #

☐ EIN

☐ Social Security #

**License #2**  
license ID

**FIG. 10C**



**Registration Wizard**

Does your business anticipate metered mail at discount rates?

☐ Yes ☒ No

Does your business have an authorization to use permit imprints at this or any other Post Office?

☐ Yes ☒ No

Does your business prepare and/or mail for other (third) parties?

☐ Yes ☒ No

< Back    Next >    Cancel

FIG. 10D

**Registration Wizard**

Are you a corporate officer or a person who has express authority within your corporation/business to sign checks?

☒ Yes ☐ No

Please enter the following information about a person with such authority:

First Name  Middle Initial

Last Name

Title

Phone

< Back    Next >    Cancel

FIG. 10E

**License #3**  
Bus. questions 2

**License #3a**  
authority for  
check writing

Registration Wizard

The USPS requires that you provide your Social Security number in order to process your Meter License request.

Social Security Number:

License #4  
Social Security #

FIG. 10F

Registration Wizard

Do you currently hold any other USPS meter licenses at this or any other Post Office?

☐ Yes ☒ No

Please enter the other postage meter licenses you hold:

	License Number	Finance Number
1	<input type="text"/>	<input type="text"/>
2	<input type="text"/>	<input type="text"/>

License #5  
other license?

FIG. 10G

**Registration Wizard**

Have you ever had a postage meter license revoked?

☐ Yes
 ☒ No

Please provide specific details. At a minimum provide the postage meter license number, date of revocation, and name of the licensing post office.

**License #6**  
ever revoked?

**FIG. 10H**

**Registration Wizard**

Before submitting your Meter License Application, please review the answers you provided for accuracy. *The USPS requires that all information submitted is accurate.*

If any information is incorrect, select the "Back" button to return to the appropriate screen and change the information.

**1. Start**

**2. Register with Stamps.com**

**3. Apply for a postal meter**

**4. Print**

**5. Finish**

Applicant's Name: mark a. stier

Physical Address:  
28341 LA BAJADA  
LAGUNA NIGUEL, CA 92677-7057

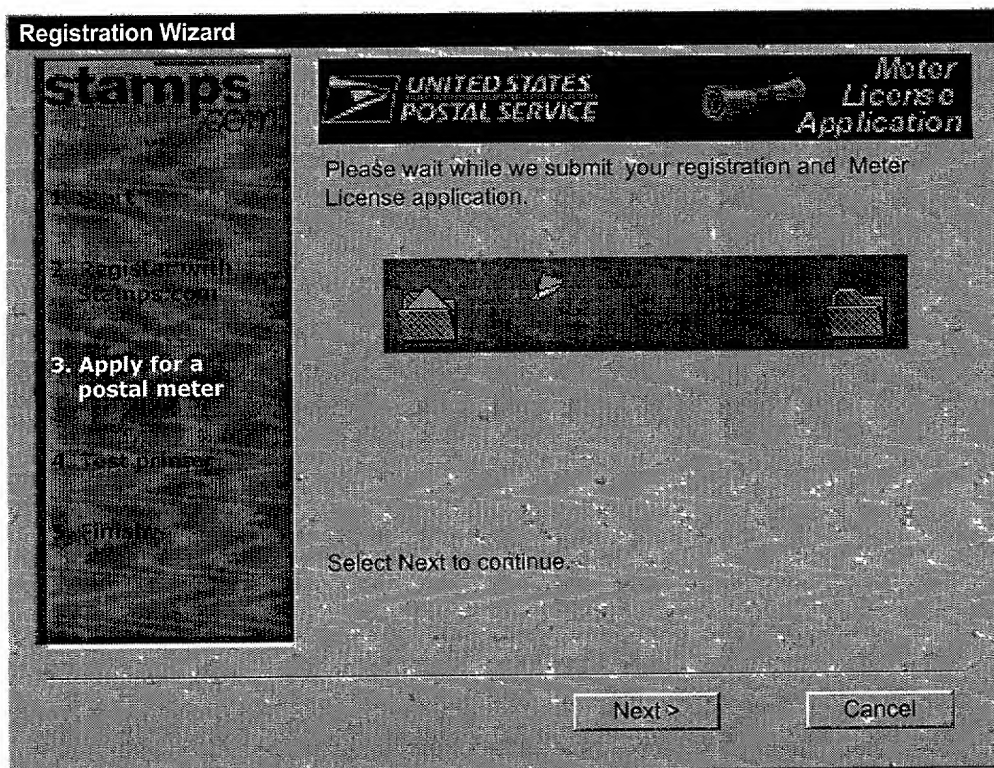
Mailing Address:  
28341 LA BAJADA  
LAGUNA NIGUEL, CA 92677-7057

☐ I verify that the information shown is truthful and accurate.

**License #7**  
Submit

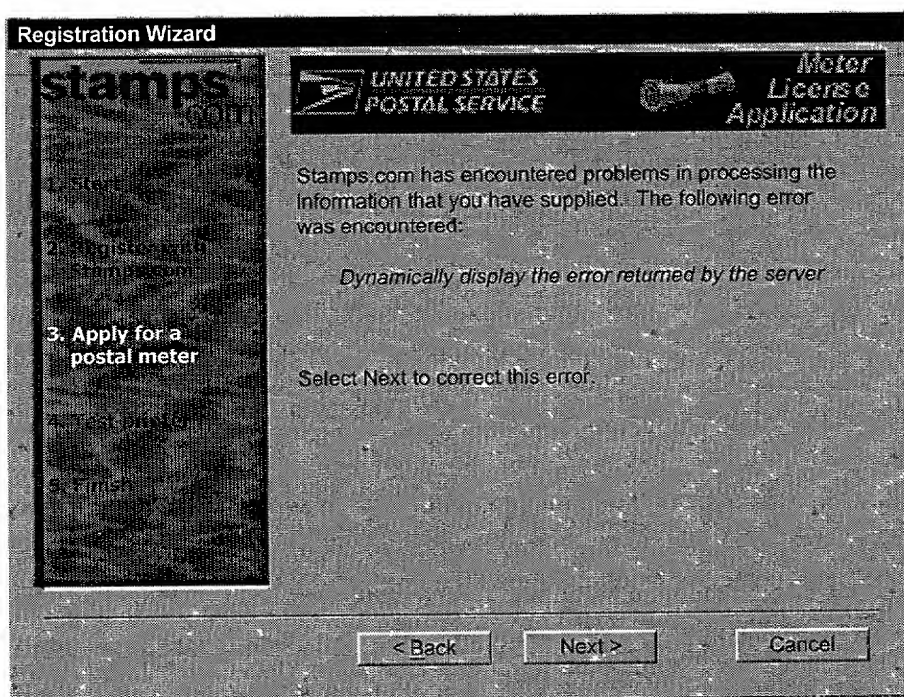
**FIG. 10I**





License #8  
submitting  
information


FIG. 10J



Error Display

FIG. 10K

**Registration Wizard**

**stamps.com**  **Service Sign Up**

The user name that you entered is not available, since it is already being used by another Stamps.com customer. Please enter another user name, or select the "Suggest" button and Stamps.com will provide you with a unique user name.


User Name:

< Back    Next >    Cancel

**Error Dialog**  
User name

**FIG. 10L**

**Registration Wizard**

**stamps.com**  **Service Sign Up**

Please select a means of payment to be used for both the purchase of postage and for the payment of convenience fees.

Payment Type:

Name on Acct:

ABA Routing #:

Account #:

Bank Name:

Account Type: ☐ Checking ☐ Savings

< Back    Next >    Cancel

**Error Dialog**  
Bad ACH

**FIG. 10M**



**Registration Wizard**

**stamps.com** **Service Sign Up**

Please select a means of payment to be used for both the purchase of postage and for the payment of convenience fees.

Payment Type:

Cardholder Name:

Card #:

Exp. Date: month:  year:

Please provide your billing address for this account.

☐ Use Mailing address

Address:

City:

State:  Zip:

< Back    Next >    Cancel

**Error Dialog**  
credit card  
rejected

**FIG. 10N**

**Registration Wizard**

**stamps.com** **UNITED STATES POSTAL SERVICE** **Meter License Application**

Your Meter License Application has been successfully submitted.

This license should be processed in approximately xxxxxx hours. At this time, you will be able to use all of the functionality available from Stamps.com.

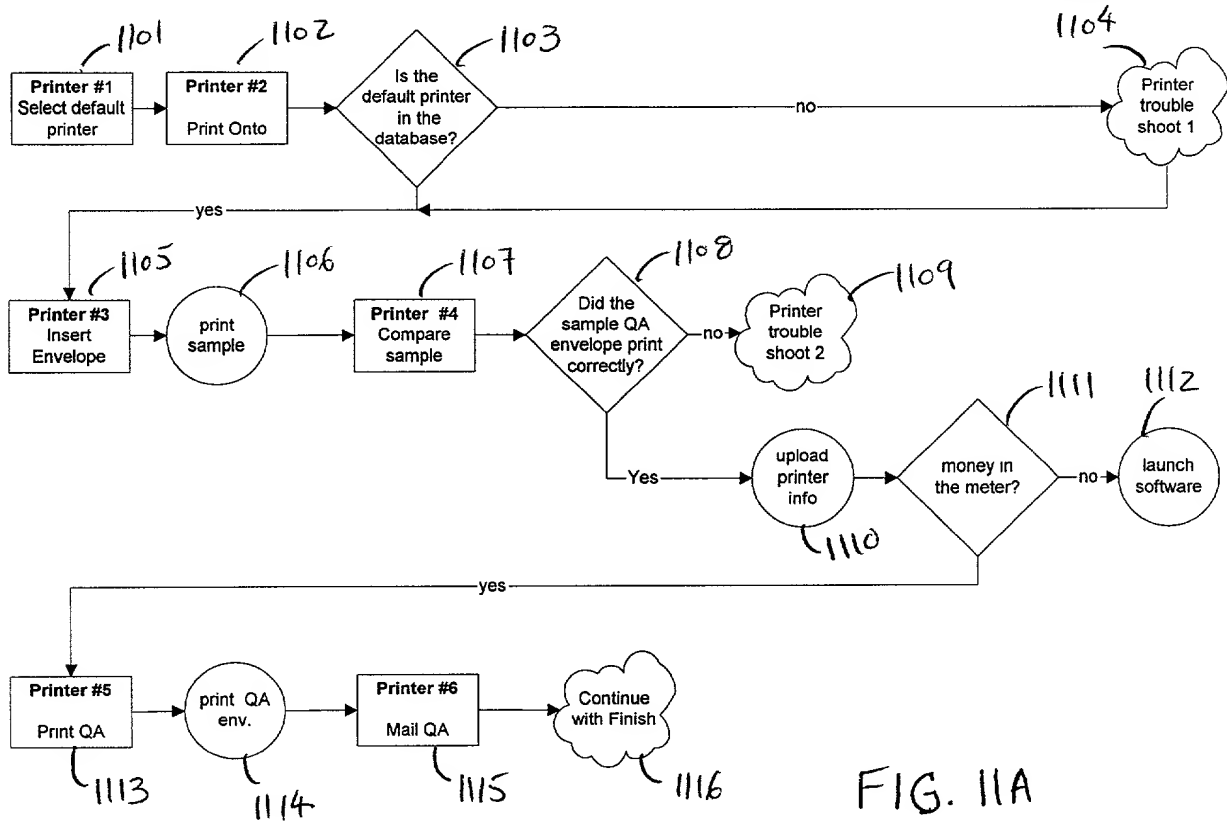
The next step is test your printer and determine whether or not your printer can print postage that meets USPS requirements. Select "Next" and the wizard will assist you in this process.

Next >    Cancel

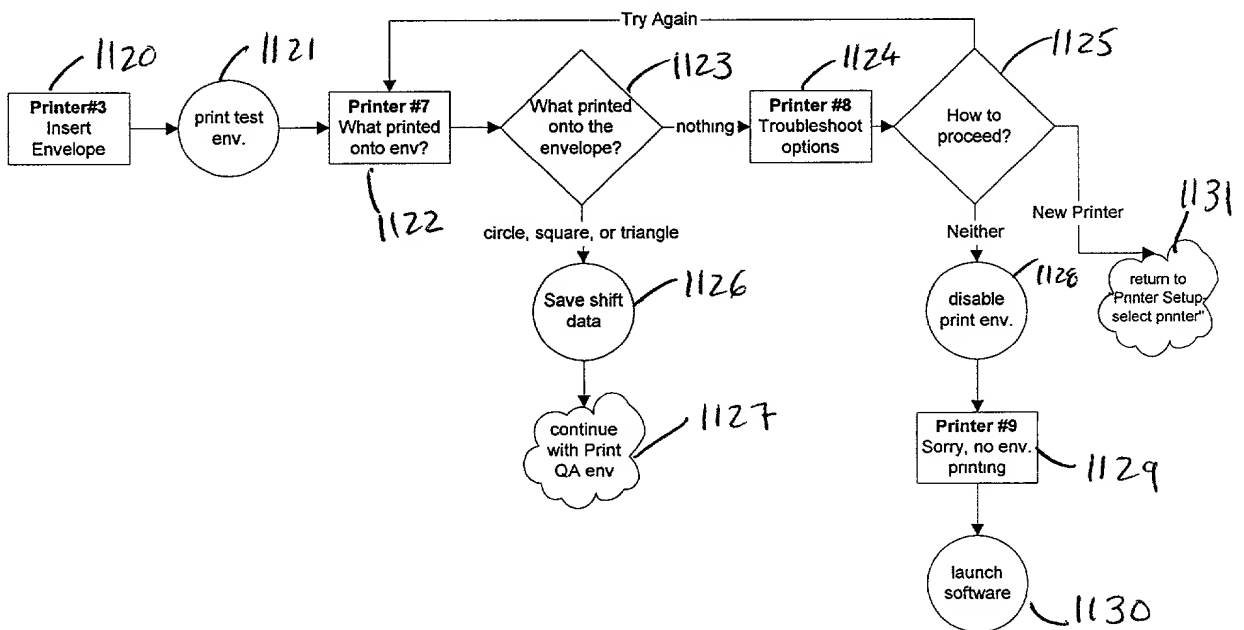
**License #9**  
Verification &  
Welcome PT

**FIG. 100**




## Getting Started Wizard - Print Setup Wizard component



## Getting Started Wizard - Print Config Wizard component



**Stamps.com Internet Postage Registration**

Please select a default printer to be used for printing postage.

Default Printer:

In order to ensure that the selected printer is able to print in accordance with USPS requirements, we will need to print one or more sample pieces of postage as well as a real piece of postage.


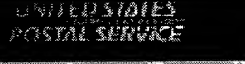

Select "Next" to continue.

< Back    Next >    Cancel

**Printer #1**  
Select Default  
Printer

**FIG. 11C**

**Stamps.com Internet Postage Registration**

Select the size of the envelopes that the postage will be printed onto.

Print Onto:

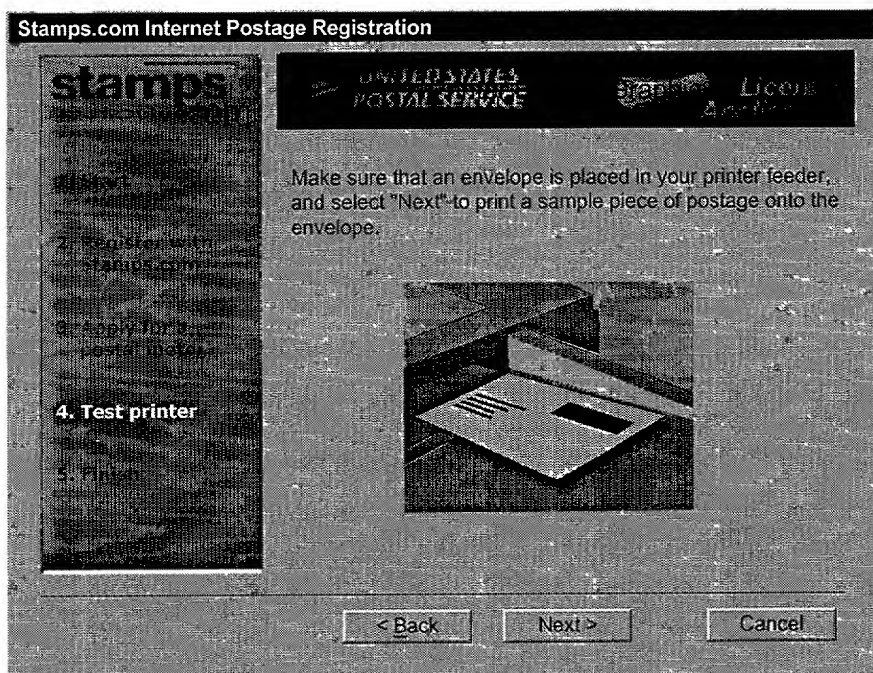
Would you like the return address to be printed on these envelopes? (select "no" if you are using envelopes with a pre-printed return address)

☒ yes  
☐ no

< Back    Next >    Cancel

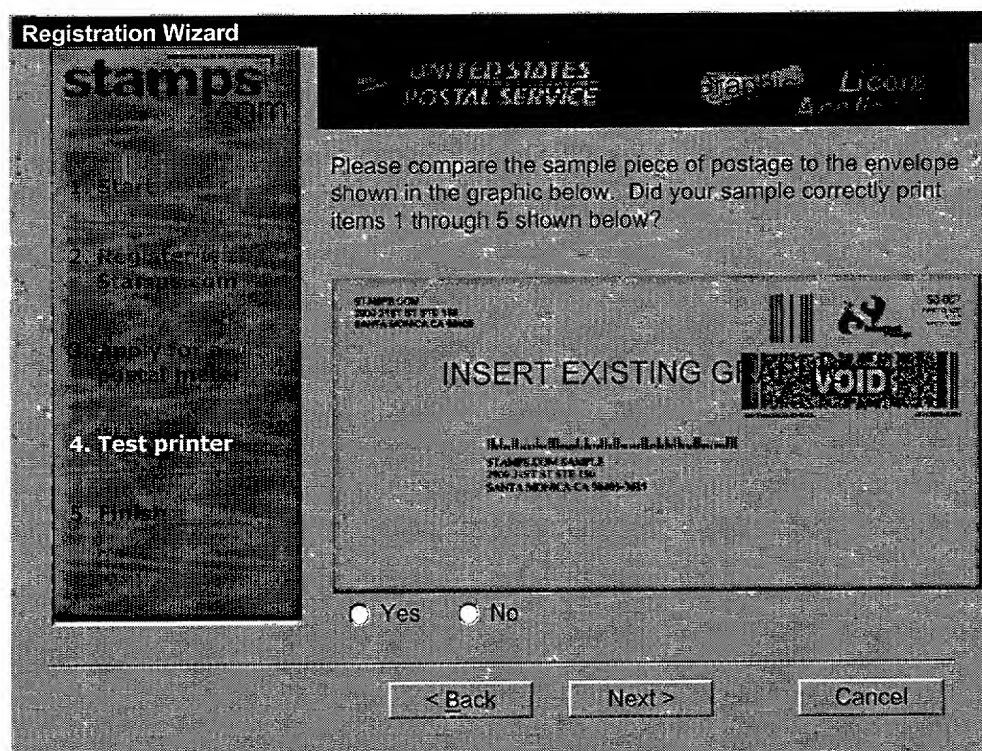
**Printer #2**  
Print Onto

**FIG. 11D**



Printer #3  
Insert  
Envelope

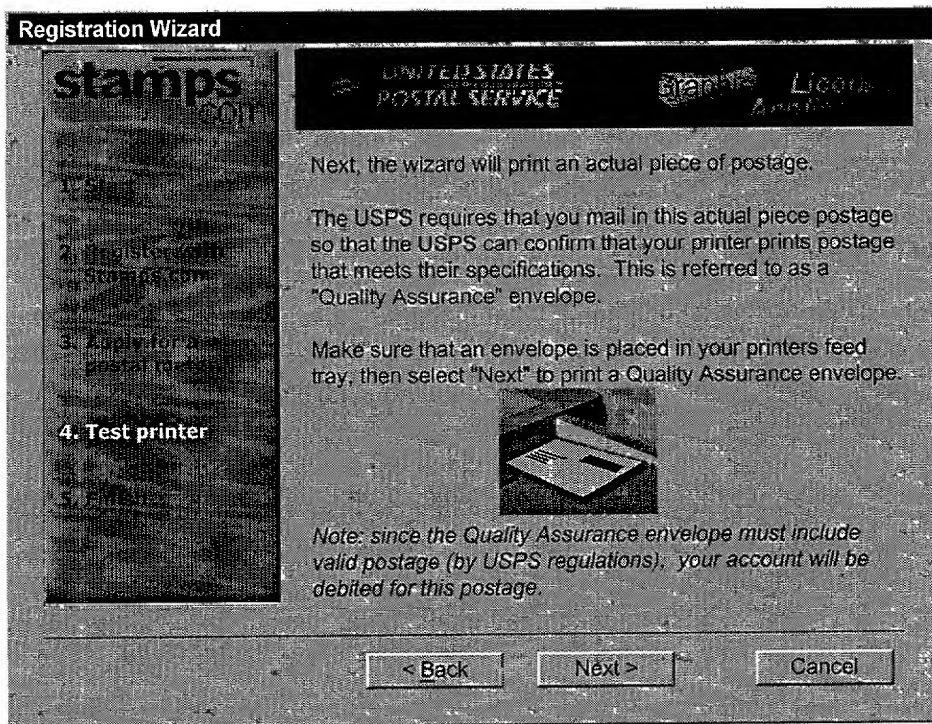
FIG. 11E



Printer #4  
Compare  
Sample

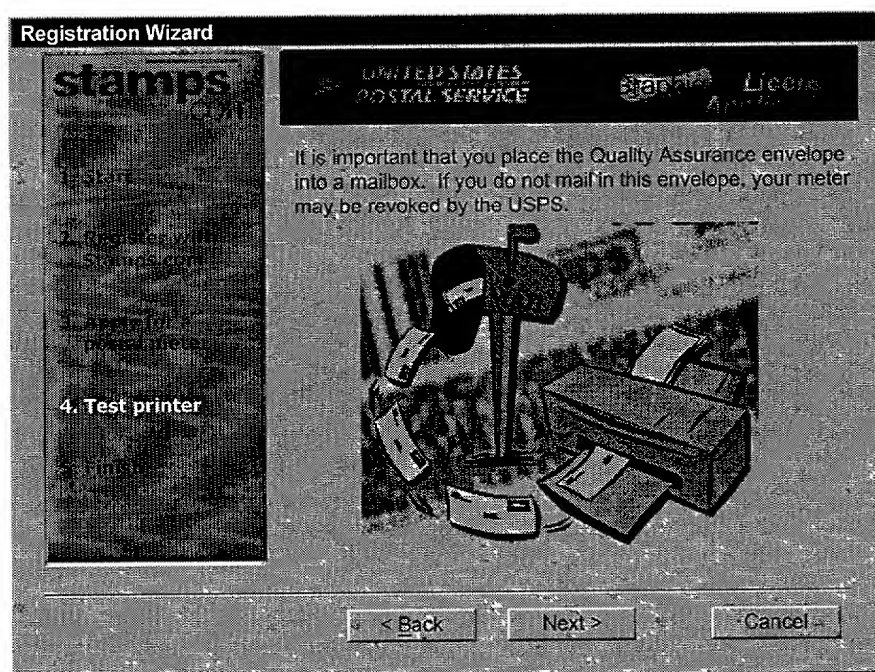
FIG. 11F





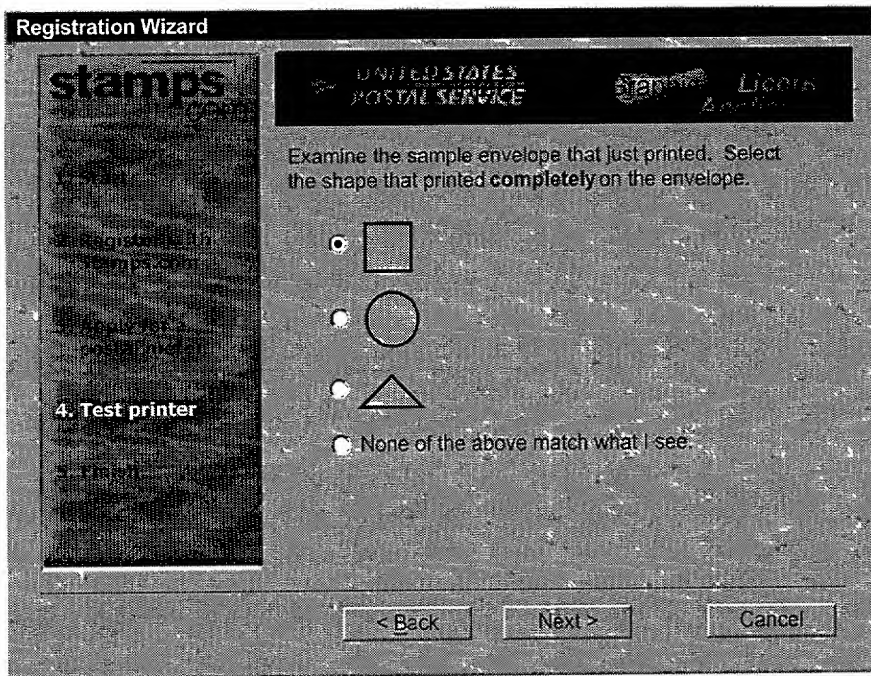
**Printer #5**  
Print QA env

**FIG. 11G**



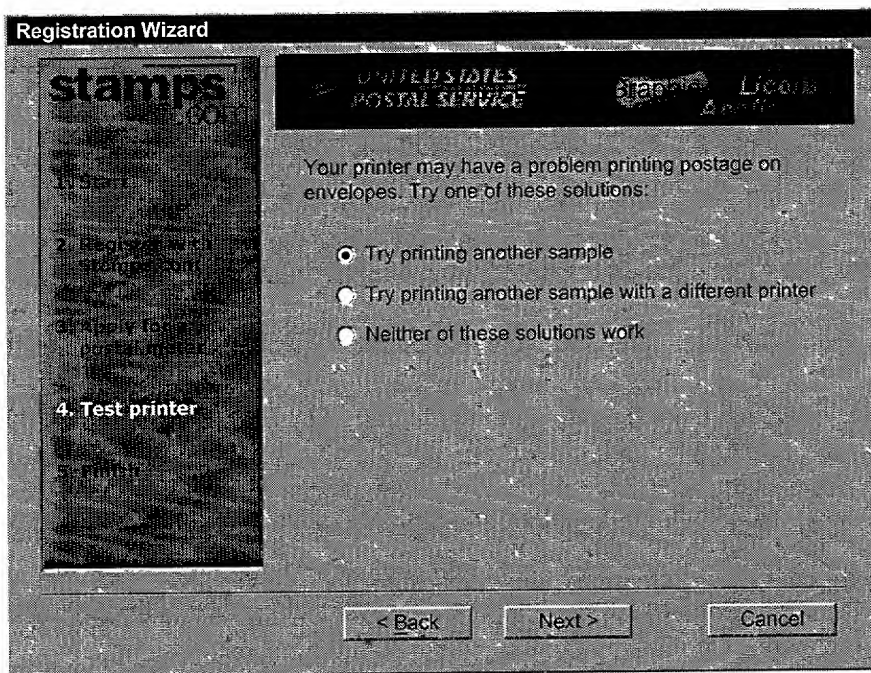
**Printer #6**  
Mail QA env

**FIG. 11H**



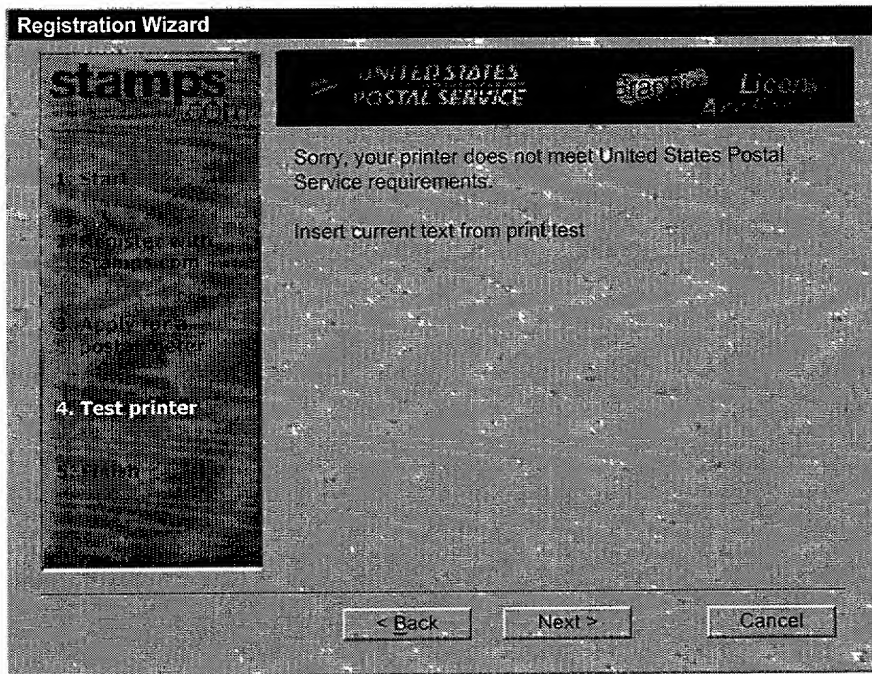
**Printer #7**  
What printed  
onto env?

**FIG. 11I**



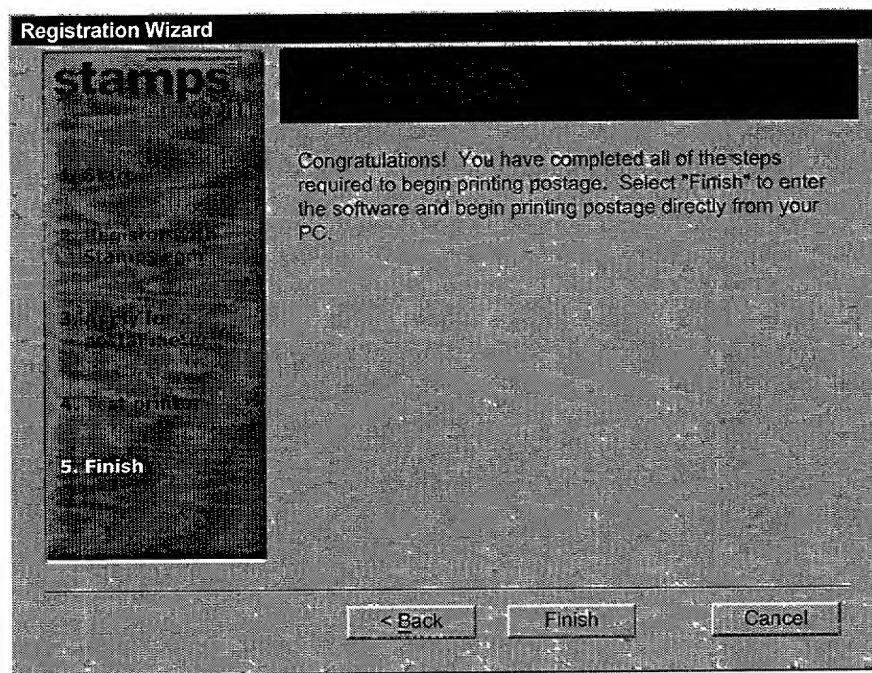
**Printer #8**  
Troubleshoot  
options

**FIG. 11J**



**Printer #9**  
 Sorry, no  
 env. printing

**FIG. 11K**



**Finish #1**  
 Congrats

**FIG. 11L**

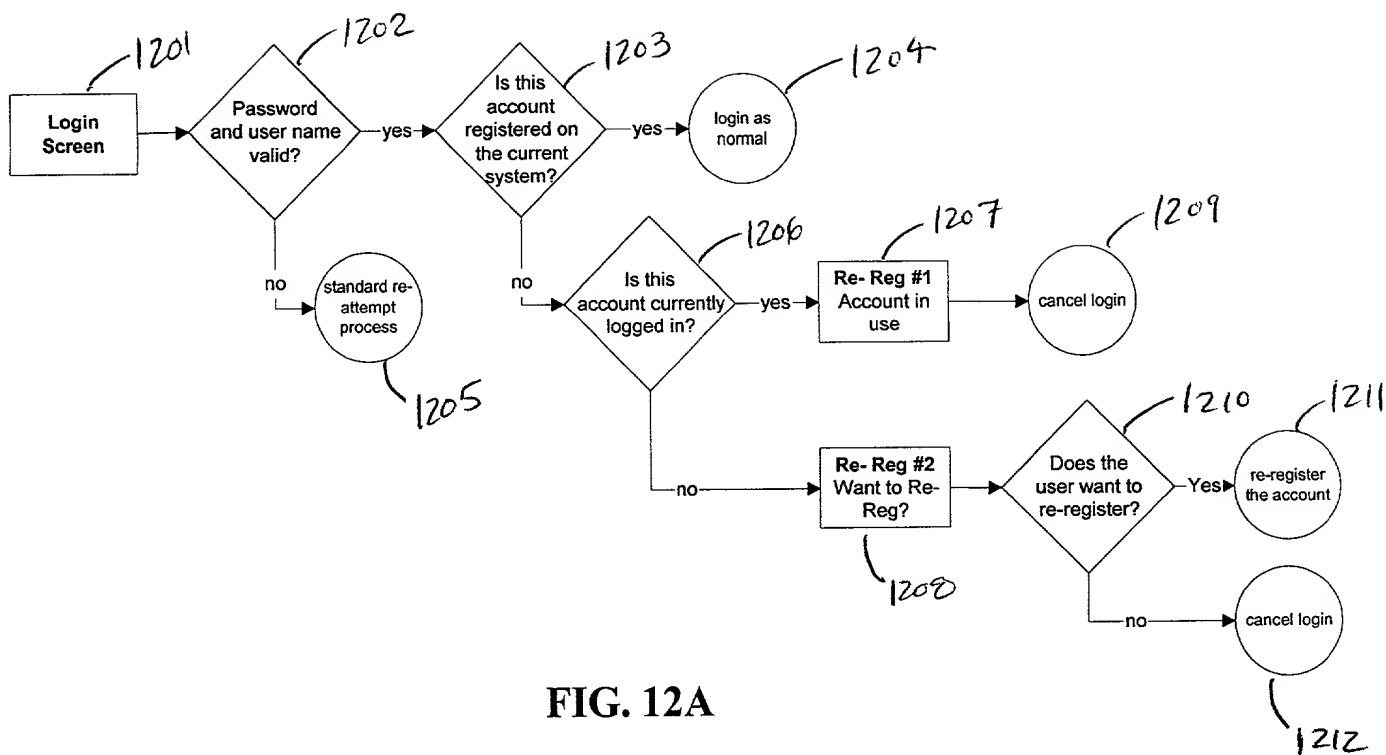
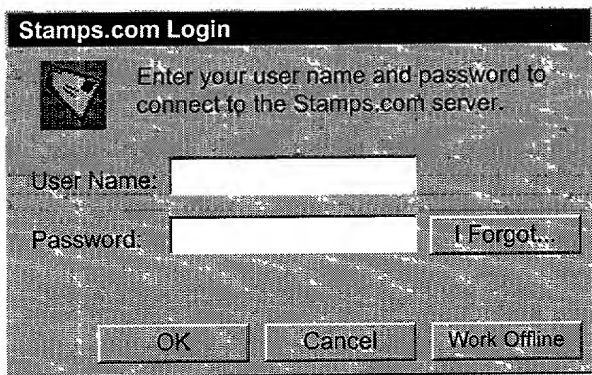
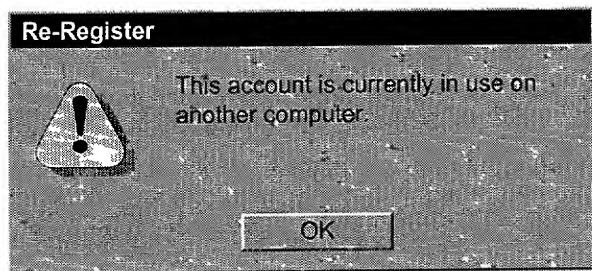


FIG. 12A



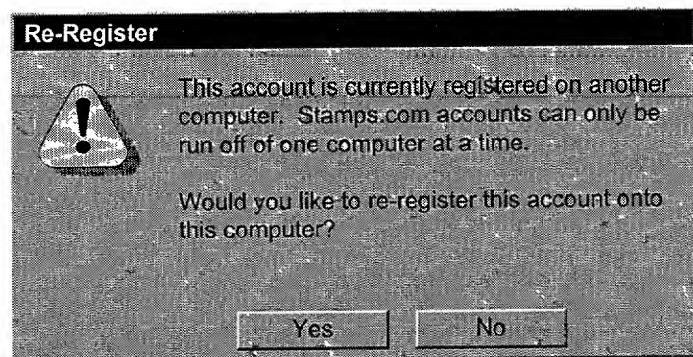


**FIG. 12B**



**Re-Reg #1**  
Account in  
use

**FIG. 12C**



**Re-Reg #2**  
Want to  
Re-reg?

**FIG. 12D**

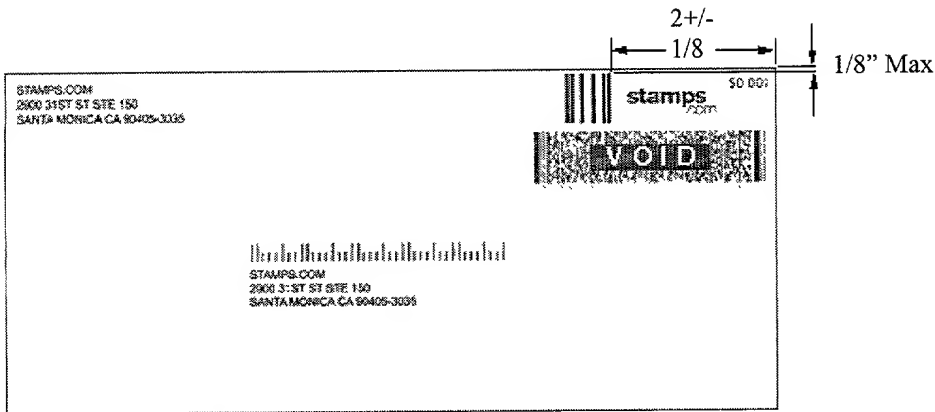


FIG. 13A

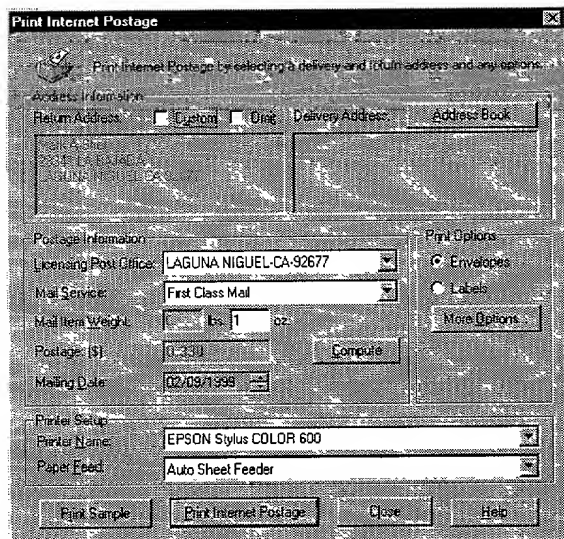


FIG. 13B

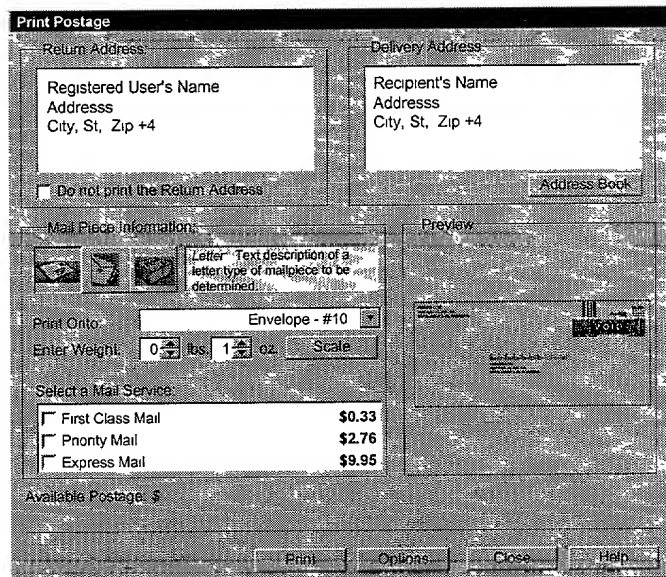


FIG. 13C

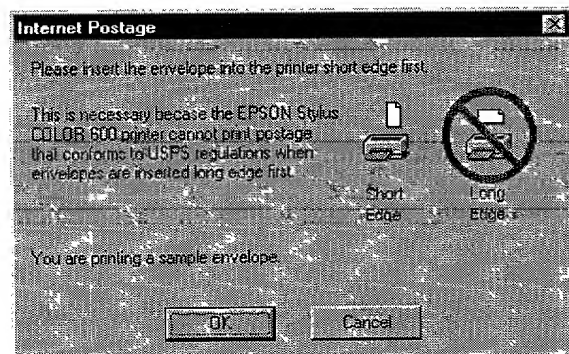


FIG. 13D

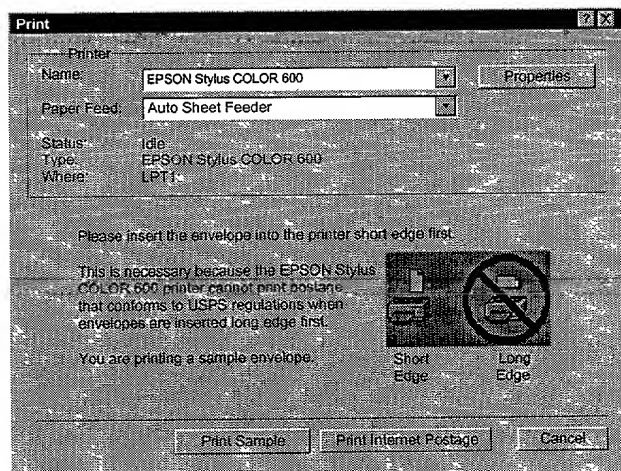


FIG. 13E

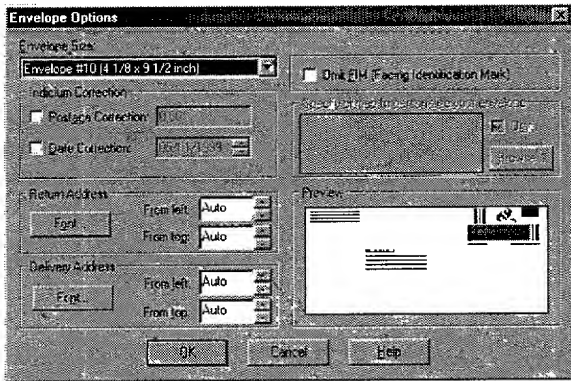


FIG. 13F

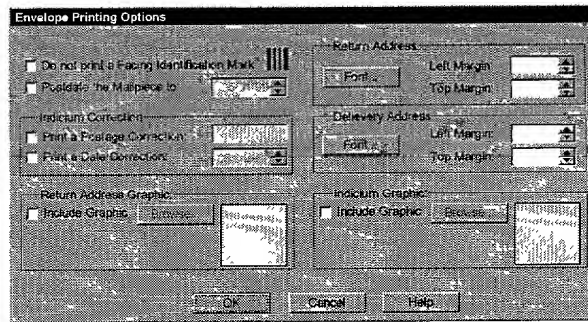


FIG. 13G

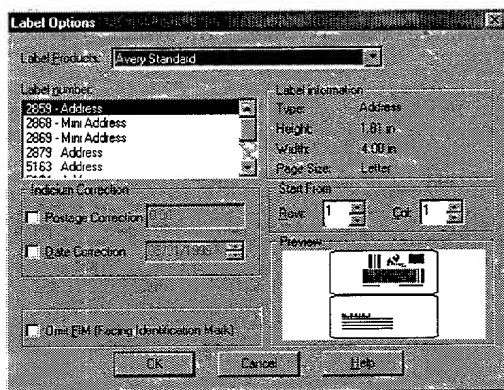


FIG. 13H

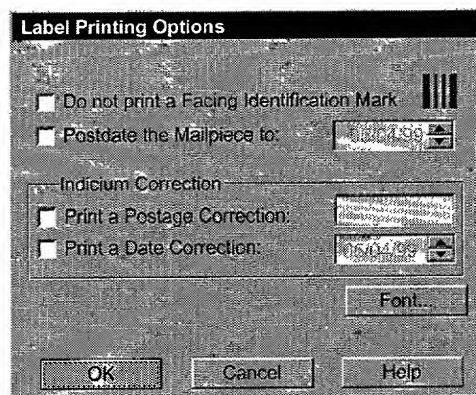


FIG. 13I

FIG. 13F

Print Postage

Return Address:

Registered User's Name  
Addresss  
City, St, Zip +4





☐ Do not print the Return Address

Delivery Address:

Recipient's Name  
Addresss  
City, St, Zip +4

Address Book

Mail Piece Information:

Letter: Text description of a letter type of mailpiece to be determined.

Print On:

Envelope - #10

Enter Weight:

0 lbs 1 oz


Scale

Select a Mail Service:

<input checked="" type="checkbox"/> First Class Mail:	\$0.33
Priority Mail:	\$2.76
Express Mail:	\$9.95

Available Postage: \$

Preview



Print

Options

Close

Help

FIG. 13J



**Print Postage**

Return Address:

Registered User's Name  
Address  
City, St, Zip +4

☐ Do not print the Return Address

Delivery Address

Recipient's Name	\$4.73
Recipient's Name	\$4.89
Recipient's Name	\$5.09
Recipient's Name	\$5.31
Recipient's Name	\$5.31

Address Book

Mail Piece Information

Letter. Text description of a letter type of mailpiece to be determined.

Print On:

Enter Weight:  lbs.  oz.

Select a Mail Service:

First Class Mail:	\$1.12
Priority Mail:	\$4.73 to \$5.31
Express Mail:	\$13.25 to \$21.98

Preview

Available Postage: \$

Cost of Mailing: xx recipients @ \$yy.yy = \$zzz.zz

FIG. 13K

**Print**

Printer:

Name:

Paper Feed:

Status: Idle

Type: EPSON Stylus COLOR 600

Where: LPT1:

Please insert the envelope into the printer short edge first.

This is necessary because the EPSON Stylus COLOR 600 printer cannot print postage that conforms to USPS regulations when envelopes are inserted long edge first.

Short Edge      Long Edge

You are printing a sample envelope.

FIG. 13L

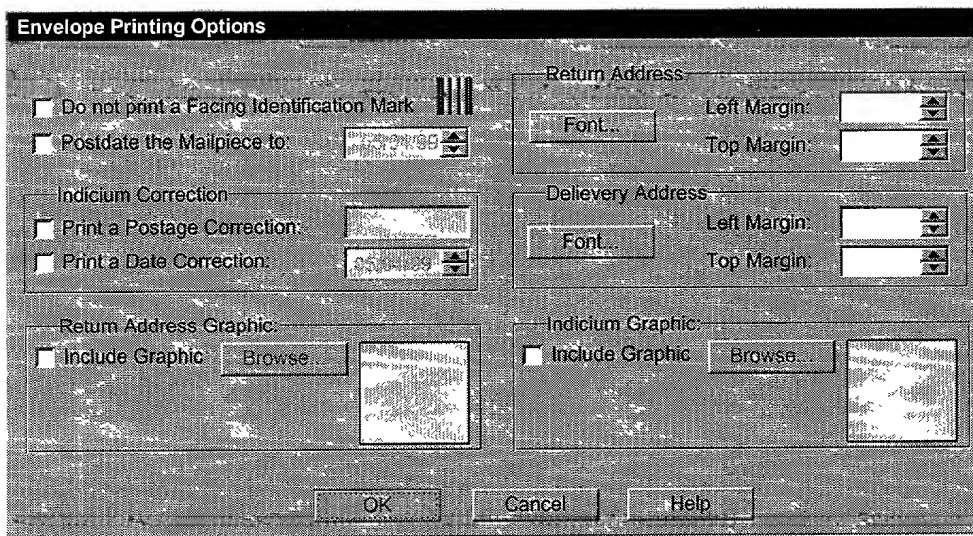


FIG. 13M

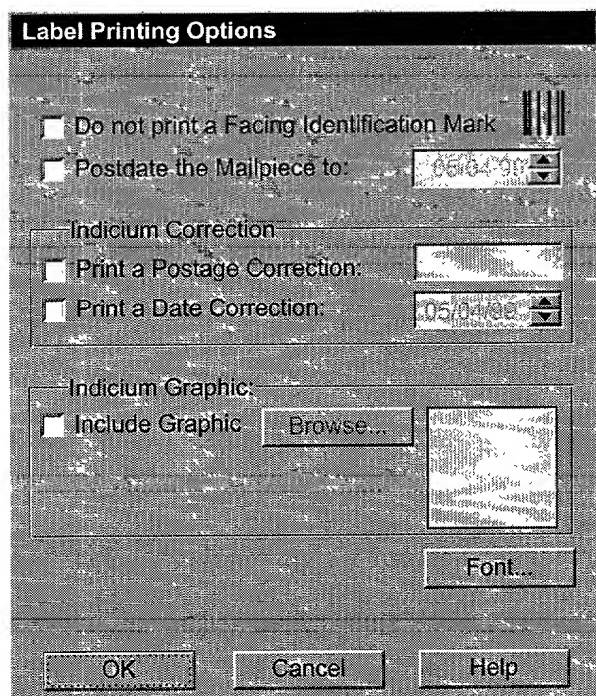


FIG. 13N

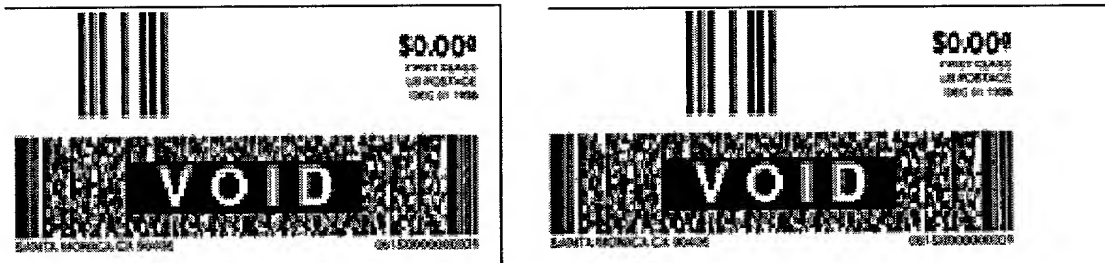


FIG. 14A

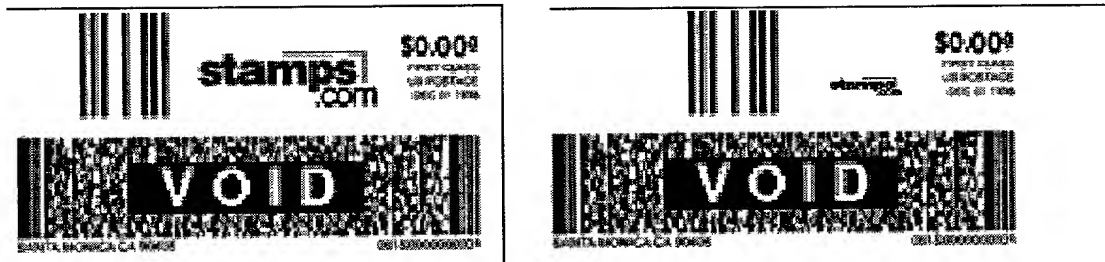


FIG. 14B

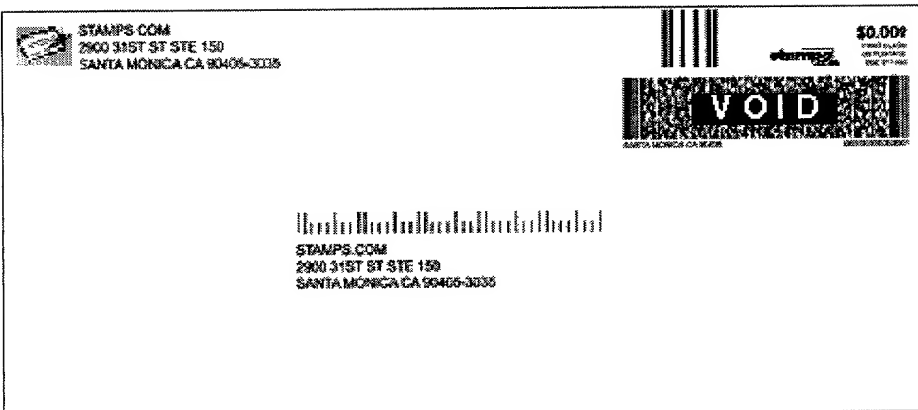


FIG. 15A

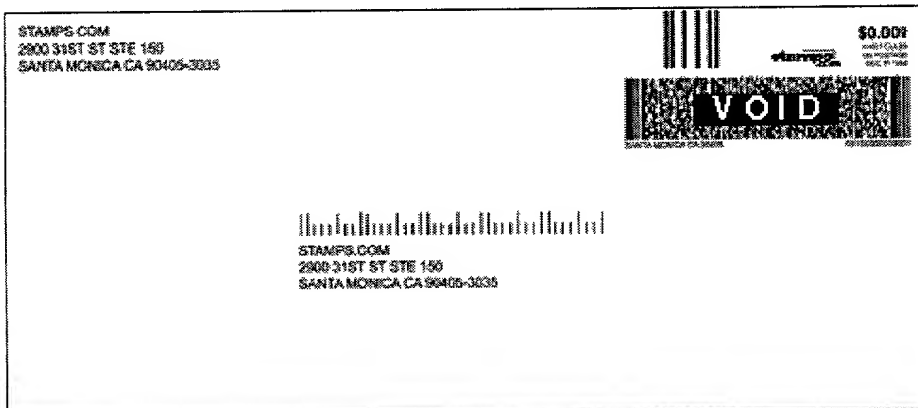


FIG. 15B

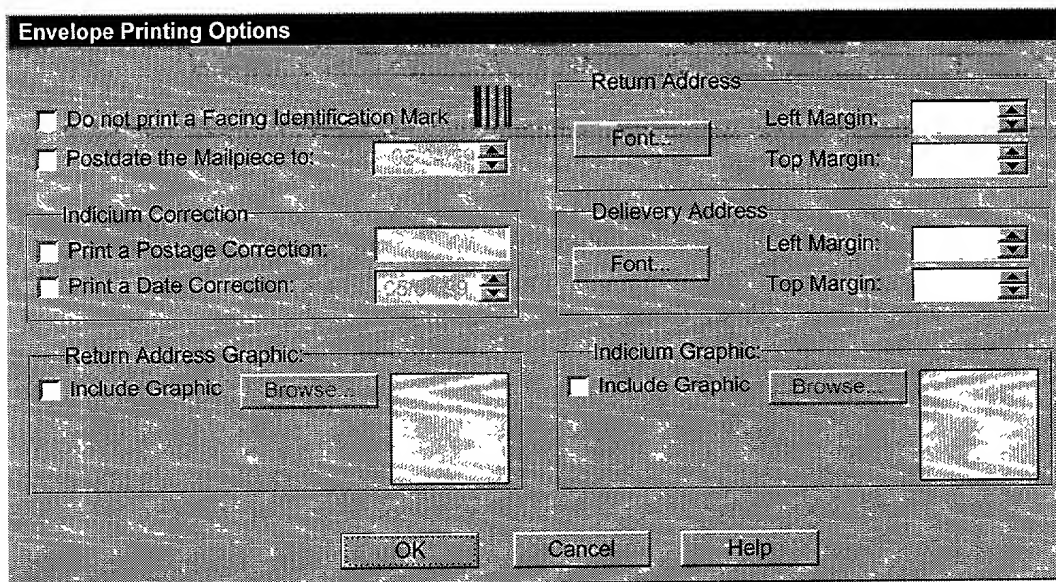


FIG. 15C

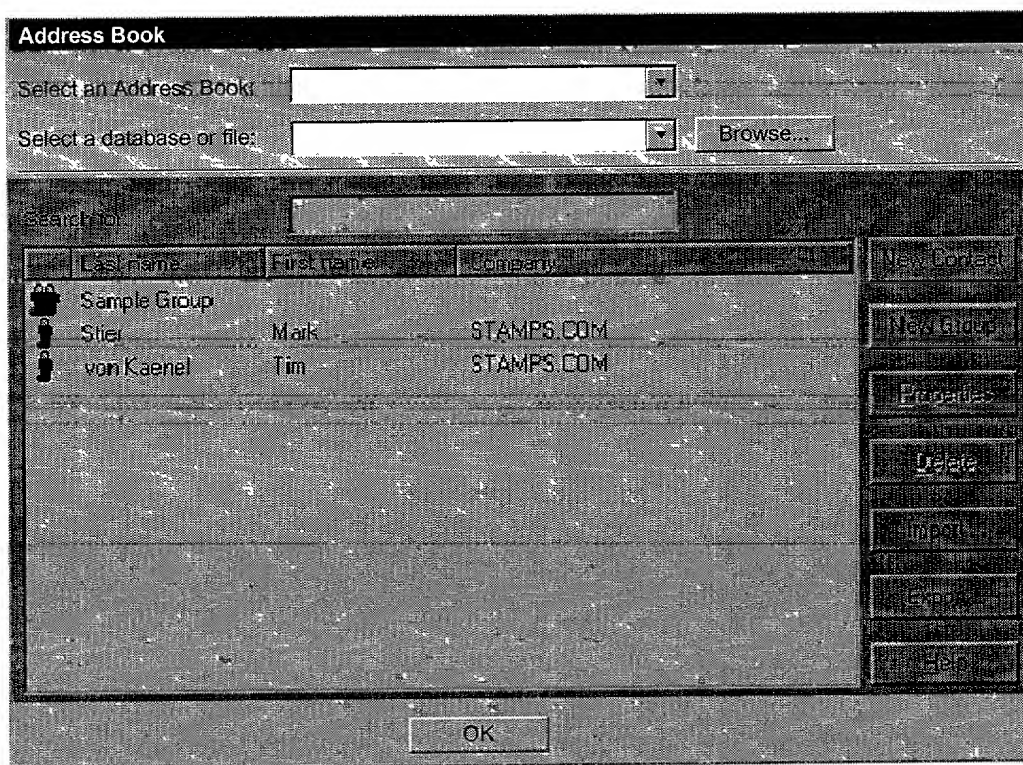


FIG. 16A



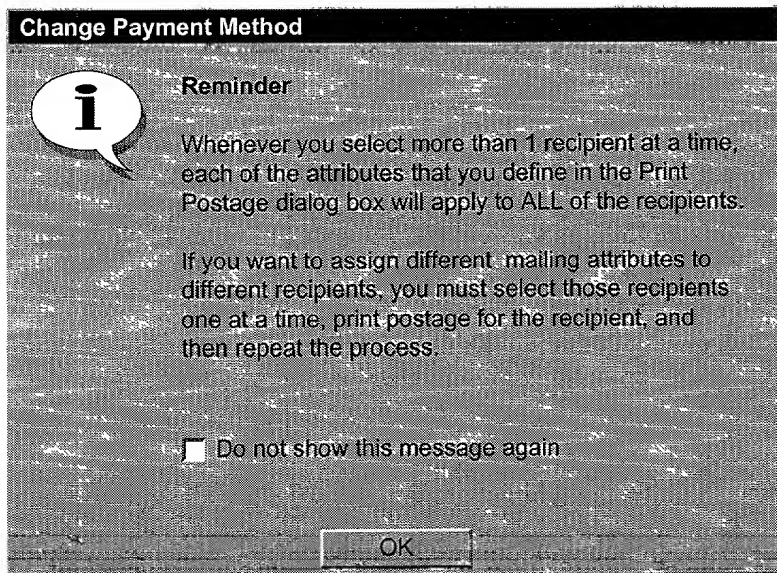


FIG. 16B

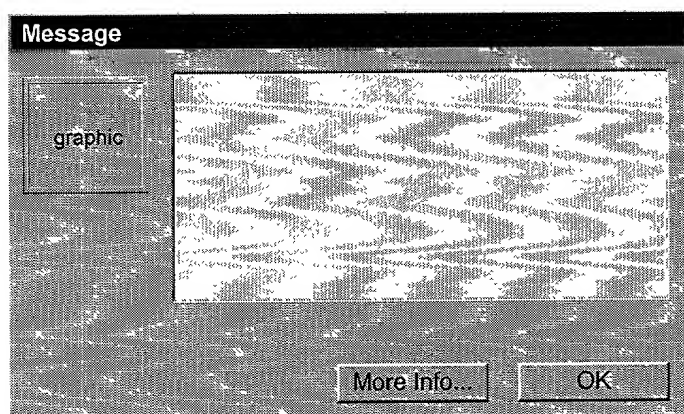


FIG. 17A

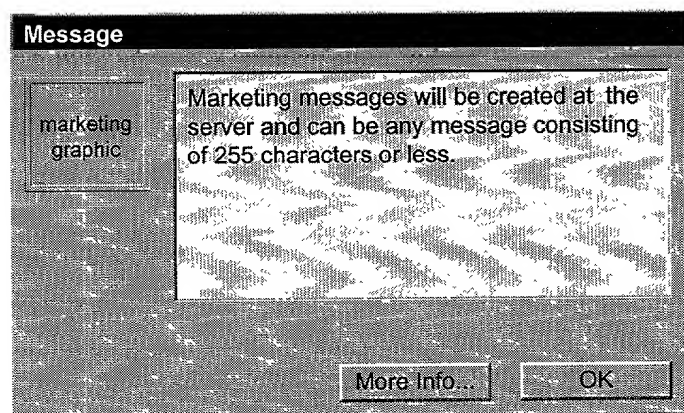


FIG. 17B

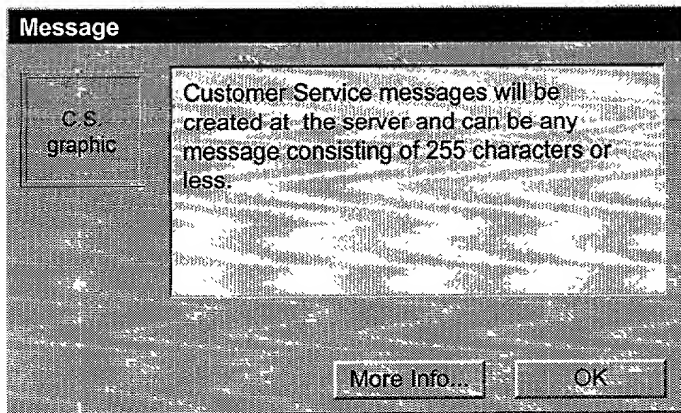


FIG. 17C

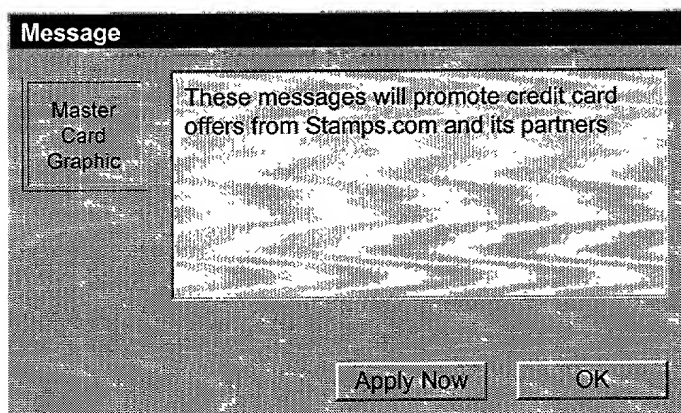


FIG. 17D

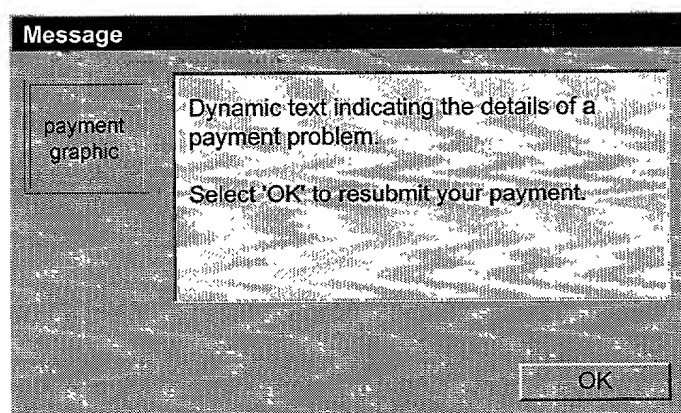


FIG. 17E

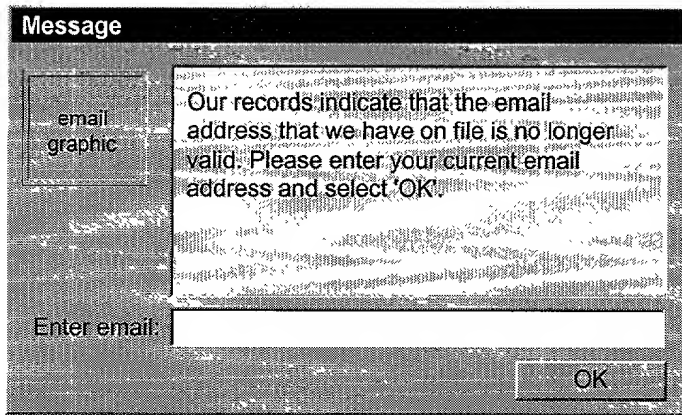


FIG. 17F

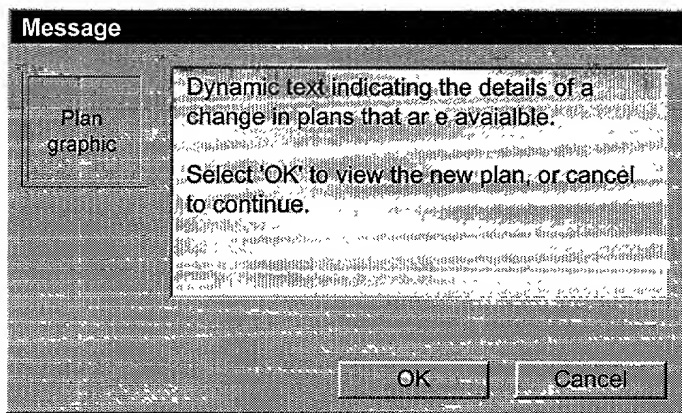


FIG. 17G

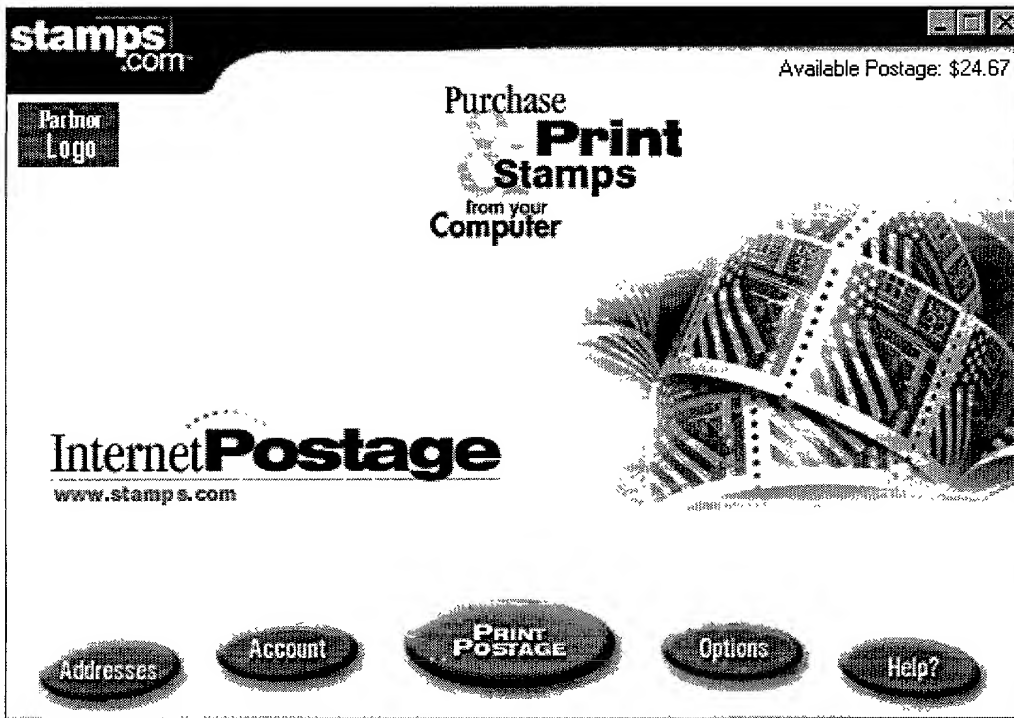


FIG. 18

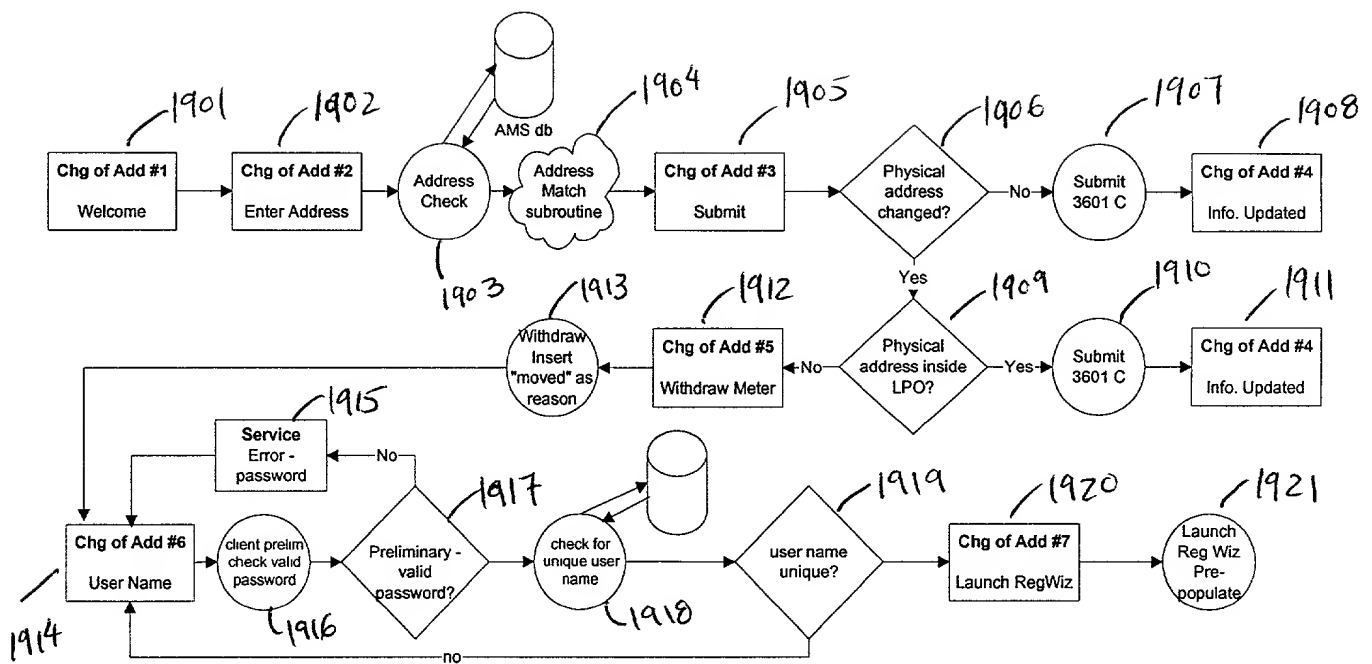


FIG. 19A

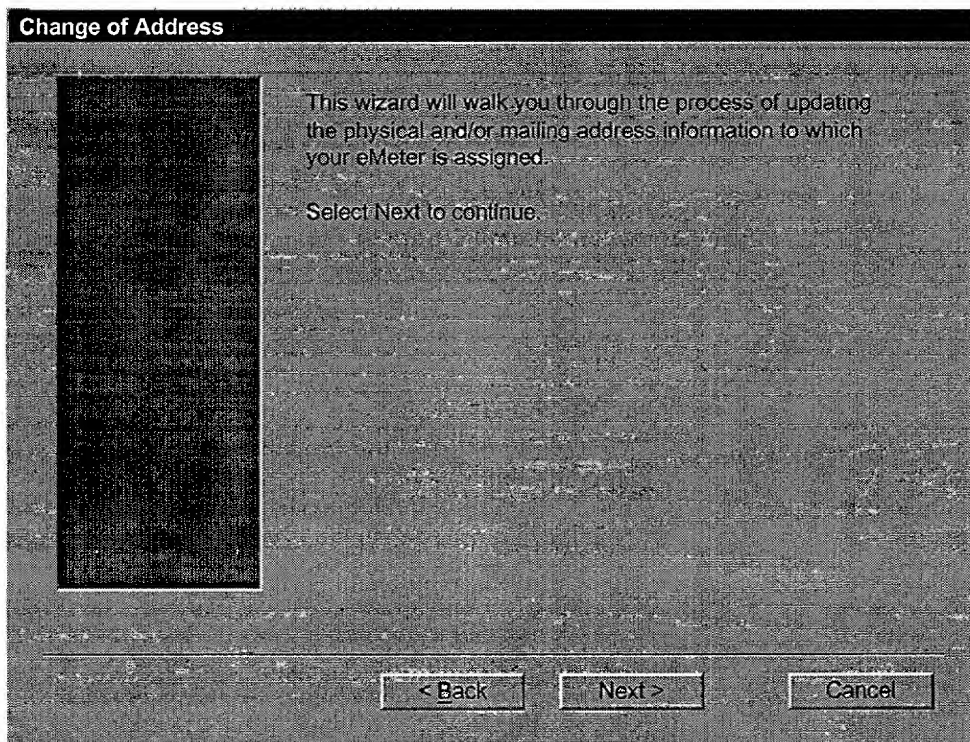


FIG. 19B

Chg of Add #1  
Welcome



**Change of Address**

Please enter any changes to either your physical or mailing address.

*Physical address (where this computer is located)*

Address: 259 Granada Avenue

City: Long Beach

State: CA Zip: 90803

*Mailing address (where you receive mail)*

☐ Use physical address

Address:

City:

State: Zip:

< Back    Next >    Cancel

**Chg of Add #2**  
Enter Address

**FIG. 19C**

**Change of Address**

Before submitting the updated information to the USPS, please review the answers that you provided and verify their accuracy:

Applicant's Name: mark a. stier

Physical Address:  
28341 LA BAJADA  
LAGUNA NIGUEL, CA 92677-7057

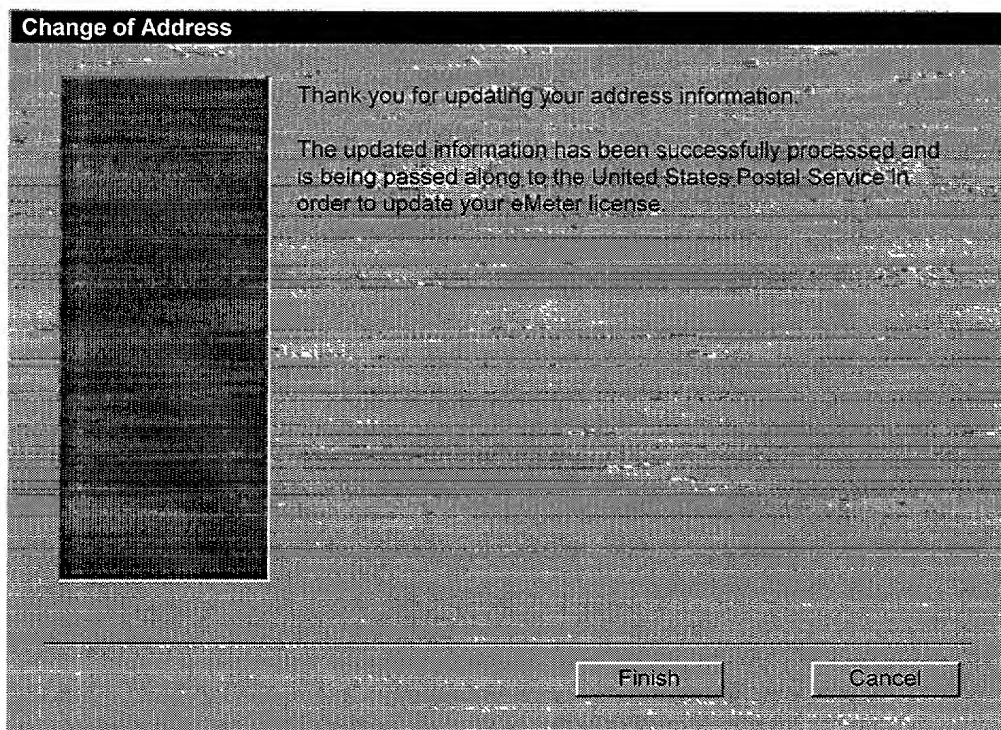
Mailing Address:  
28341 LA BAJADA  
LAGUNA NIGUEL, CA 92677-7057

☐ I verify that the information shown is truthful and accurate.

< Back    Submit Now    Cancel

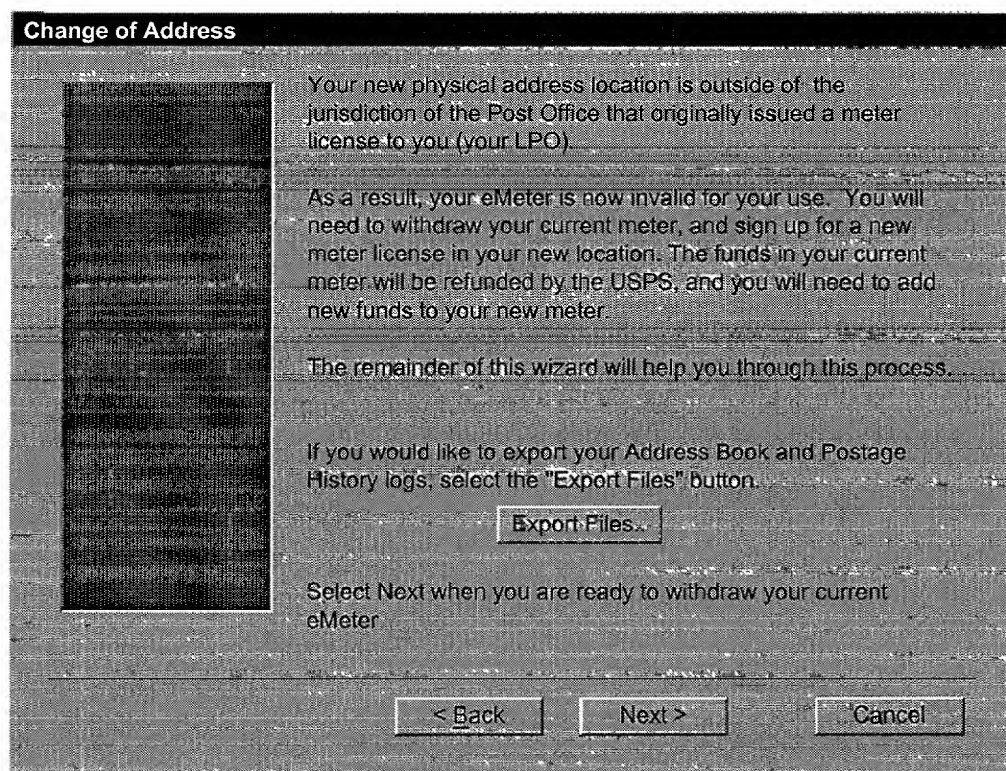
**Chg of Add #3**  
Submit

**FIG. 19D**



**Chg of Add #4**  
Info Updated

**FIG. 19E**



**Chg of Add #5**  
Withdraw Meter

**FIG. 19F**

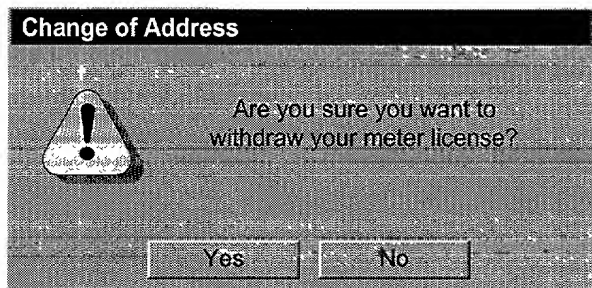


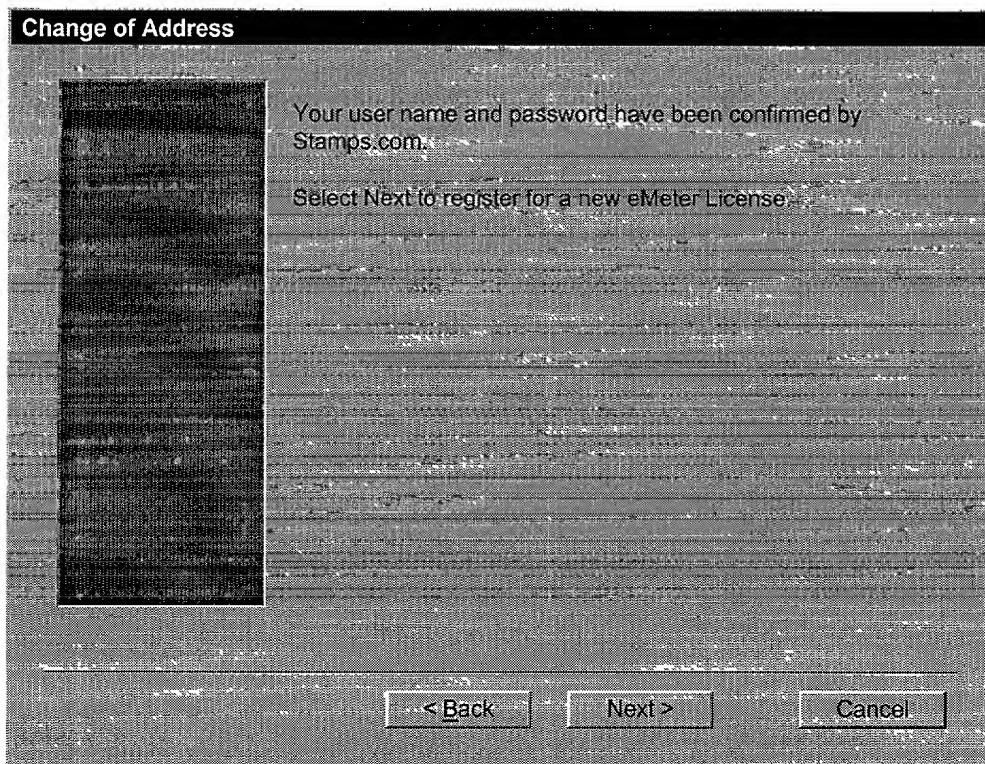
FIG. 19G

A screenshot of a software form titled "Change of Address" in a black header bar. On the left is a dark, vertical rectangular area. To the right of this area, the text "Your eMeter license has been withdrawn" is displayed. Below this, a message states: "Before registering for a new meter license, you will need to provide a NEW user name and password to access Stamps.com". There are three input fields: "User Name:" followed by a text box, "Password:" followed by a text box, and "Retype Password:" followed by a text box. Below the password fields, a note reads: "Please select a password. Your password must be at least 6 characters in length, and contain at least one letter and one number." At the bottom right, there are two buttons: "Next >" and "Cancel".

Chg of Add #6  
User Name

FIG. 19H





Chg of Add #7  
Launch Reg  
Wizard

FIG. 19I

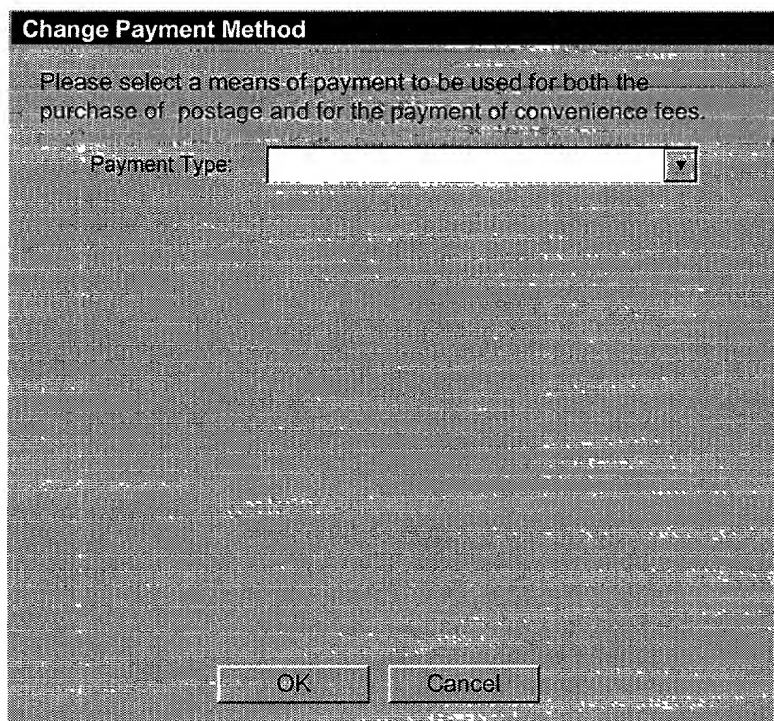


FIG. 20A

**Change Payment Method**

Please select a means of payment to be used for both the purchase of postage and for the payment of convenience fees.

Payment Type:

Cardholder Name:

Card #:

Exp. Date:

Please provide your billing address for this account.

☐ Use Mailing address

Zip:

**FIG. 20B**

**Change Payment Method**

Please select a means of payment to be used for both the purchase of postage and for the payment of convenience fees.

Payment Type:

Name on Acct:

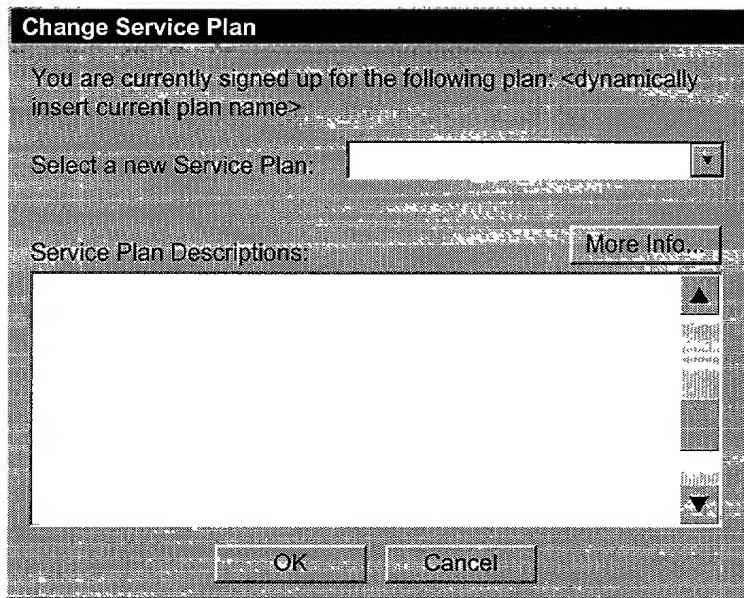
ABA Routing #:

Account #:

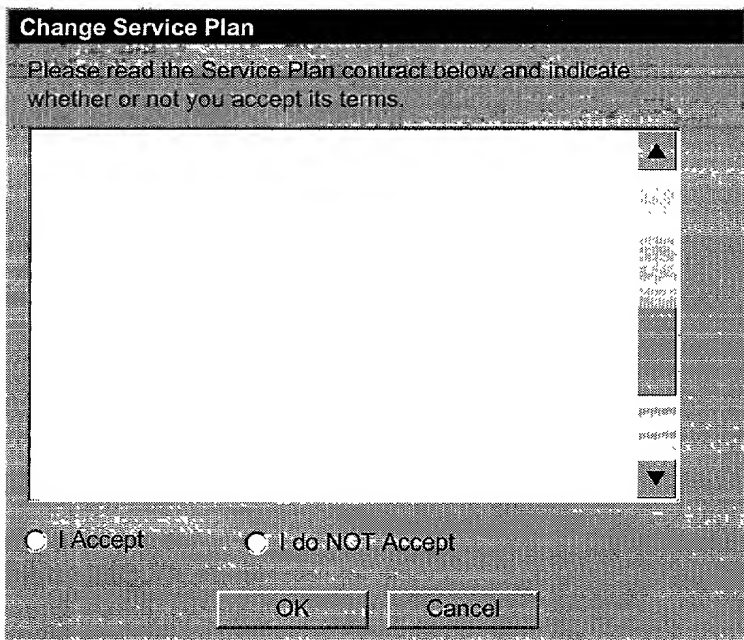
Bank Name:

Account Type: ☐ Checking ☐ Savings

**FIG. 20C**



**FIG. 21A**



**FIG. 21B**

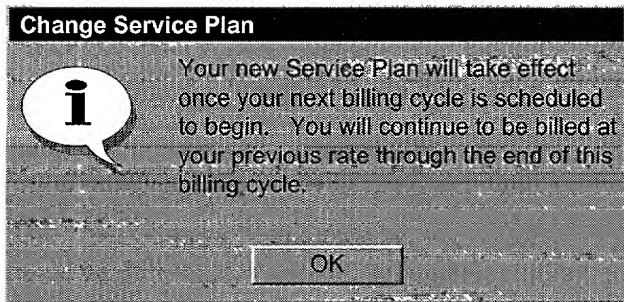


FIG. 21C

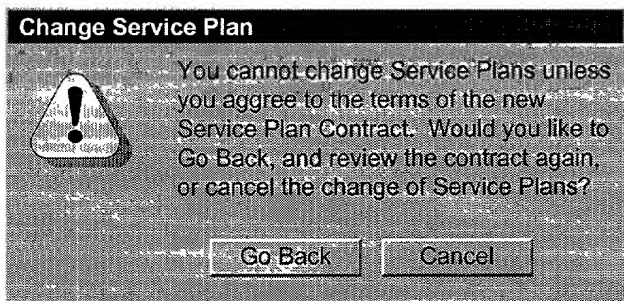


FIG. 21D

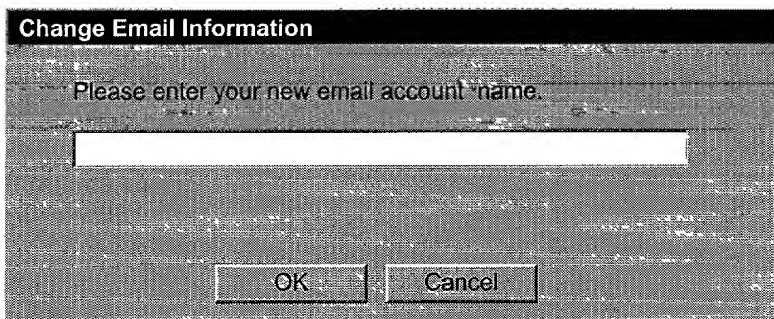


FIG. 21E

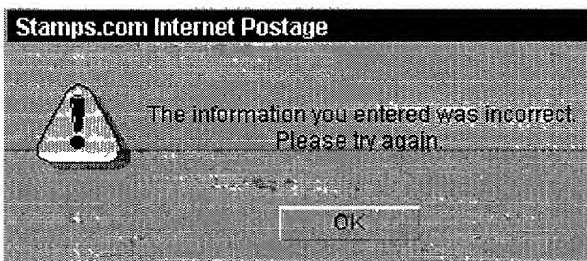


FIG. 22A



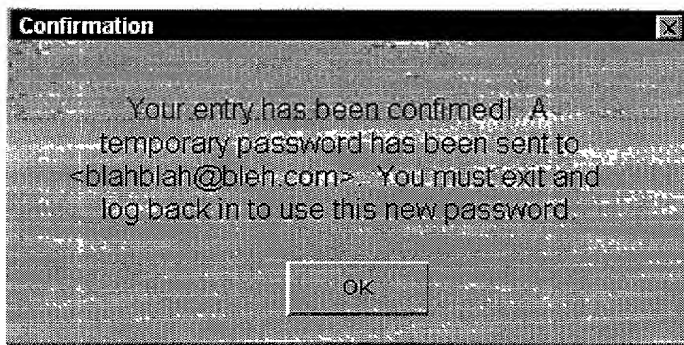


FIG. 22B

**Withdraw Meter**

If you intend to stop printing postage from Stamps.com Internet Postage and wish to close your account, you must give up access to your Postage Meter ("withdraw your meter").

I would like to withdraw my meter because:

What product/service will you now use for your postage needs?

Any remaining balance of postage that you have purchased will be refunded to you by the USPS via mail to the address that you indicate below.

Address:

City:

State:   Zip:

FIG. 23

# Registration Wizard component

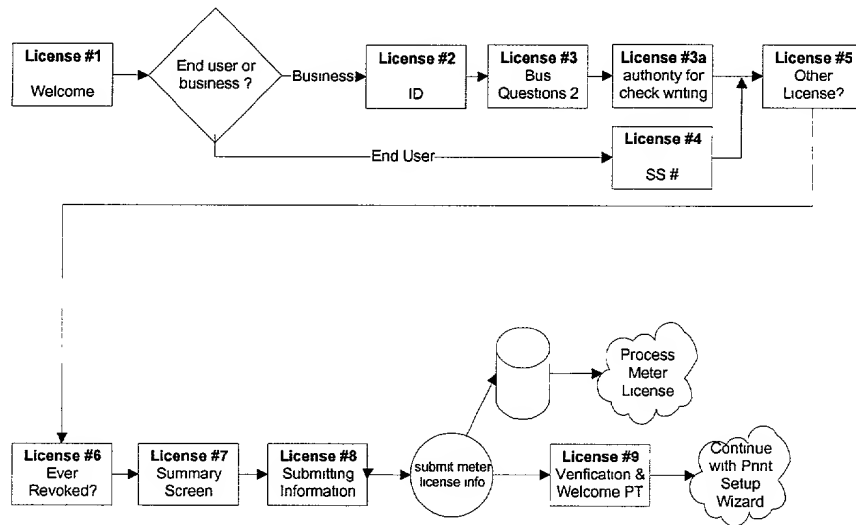


FIG. 24

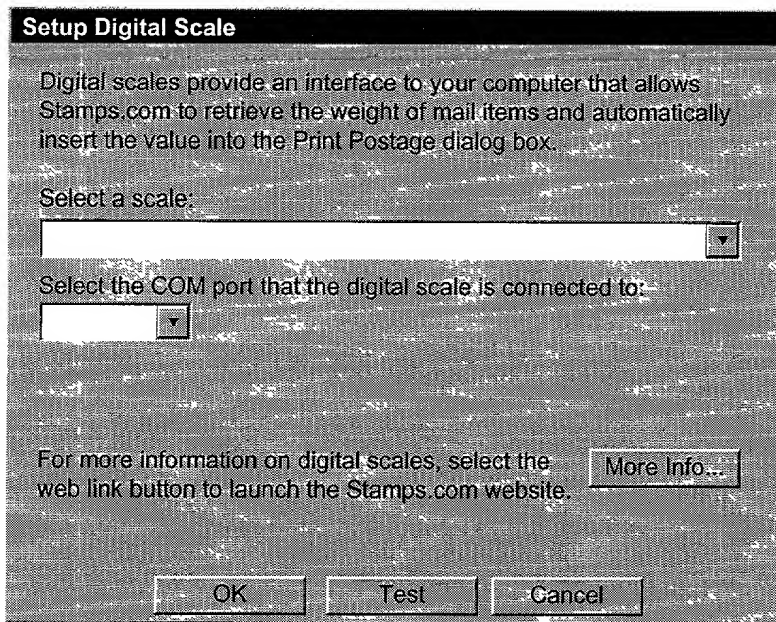


FIG. 25A

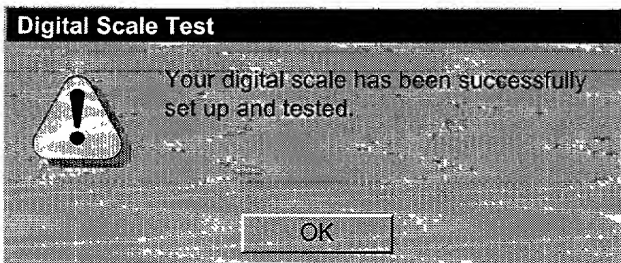


FIG. 25B

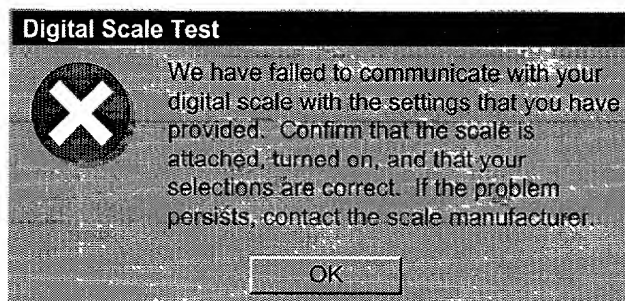


FIG. 25C

**DECLARATION AND POWER OF ATTORNEY  
FOR PATENT APPLICATIONS**

PATENT

Docket No. : 39476/RRT/S850

As a below named inventor, I hereby declare that:

My residence, post office address and citizenship are as stated below next to my name.

I believe I am the original, first and sole inventor (if only one name is listed below) or an original, first and joint inventor (if plural names are listed below) of the subject matter which is claimed and for which a patent is sought on the invention entitled ONLINE VALUE BEARING ITEM PRINTING, the specification of which is attached hereto unless the following is checked:

\_\_\_ was filed on \_\_\_ as United States Application Number or PCT International Application Number \_\_\_ and was amended on \_\_\_ (if applicable).

I hereby state that I have reviewed and understand the contents of the above-identified specification, including the claims, as amended by any amendment referred to above.

I acknowledge the duty to disclose information which is material to patentability as defined in 37 CFR § 1.56.

I hereby claim foreign priority benefits under 35 U.S.C. § 119(a)-(d) or § 365(b) of the foreign application(s) for patent or inventor's certificate, or § 365(a) of any PCT International application which designated at least one country other than the United States, listed below and have also identified below, any foreign application for patent or inventor's certificate, or PCT International application having a filing date before that of the application on which priority is claimed.

Prior Foreign Application(s)

<u>Application Number</u>	<u>Country</u>	<u>Filing Date (day/month/year)</u>	<u>Priority Claimed</u>
---------------------------	----------------	-------------------------------------	-------------------------

I hereby claim the benefit under 35 U.S.C. § 119(e) of any United States provisional application(s) listed below.

<u>Application Number</u>	<u>Filing Date</u>
---------------------------	--------------------

60/136,924	06/01/99
60/139,153	06/14/99
60/160,491	10/20/99

I hereby claim the benefit under 35 U.S.C. § 120 of any United States application(s), or any PCT International application designating the United States, listed below and, insofar as the subject matter of each of the claims of this application is not disclosed in the prior United States or PCT International application in the manner provided by the first paragraph of 35 U.S.C. § 112, I acknowledge the duty to disclose information which is material to patentability as defined in 37 CFR § 1.56 which became available between the filing date of the prior application and the national or PCT International filing date of this application:

<u>Application Number</u>	<u>Filing Date</u>	<u>Patented/Pending/Abandoned</u>
---------------------------	--------------------	-----------------------------------

**POWER OF ATTORNEY:** I hereby appoint the following attorneys and agents of the law firm CHRISTIE, PARKER & HALE, LLP to prosecute this application and any international application under the Patent Cooperation Treaty based on it and to transact all business in the U.S. Patent and Trademark Office connected



**DECLARATION AND POWER OF ATTORNEY  
FOR PATENT APPLICATIONS**

**Docket No. 39476/RRT/S850**

with either of them in accordance with instructions from the assignee of the entire interest in this application; or from the first or sole inventor named below in the event the application is not assigned; or from \_\_ in the event the power granted herein is for an application filed on behalf of a foreign attorney or agent.

R. W. Johnston	(17,968)	Wesley W. Monroe	(39,778)	Mark Garscia	(31,953)
D. Bruce Prout	(20,958)	Gregory S. Lampert	(35,581)	Gary J. Nelson	(44,257)
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Russell R. Palmer, Jr.	(22,994)	Marilyn R. Khorsandi	(45,744)	Kathy Mojibi	(41,409)
LeRoy T. Rahn	(20,356)	Daniel R. Kimbell	(34,849)	Cynthia A. Bonner	(44,548)
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Walter G. Maxwell	(25,355)	Syed A. Hasan	(41,057)	Marc A. Karish	(44,816)
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David A. Dillard	(30,831)	Daniel M. Cavanagh	(41,661)	Richard J. Paciulan	(28,248)
Thomas J. Daly	(32,213)	Molly A. Holman	(40,022)	Josephine E. Chang	(46,083)
Vincent G. Gioia	(19,959)	Lucinda G. Auciello	(42,270)	Frank L. Cire	(42,419)
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John D. Carpenter	(34,133)	Joel A. Kauth	(41,886)	Robert A. Green	(28,301)
David A. Plumley	(37,208)	Patrick Y. Ikehara	(42,681)	Derrick W. Reed	(40,138)

The authority under this Power of Attorney of each person named above shall automatically terminate and be revoked upon such person ceasing to be a member or associate of or of counsel to that law firm.

**DIRECT TELEPHONE CALLS TO : Raymond R. Tabandeh, 626/795-9900**  
**SEND CORRESPONDENCE TO : CHRISTIE, PARKER & HALE, LLP**  
**P.O. Box 7068, Pasadena, CA 91109-7068**

I declare that all statements made herein of my own knowledge are true and that all statements made on information and belief are believed to be true; and further that these statements were made with the knowledge that willful false statements and the like so made are punishable by fine or imprisonment, or both, under Section 1001 of Title 18 of the United States Code and that such willful false statements may jeopardize the validity of the application or any patent issued thereon.

Full name of sole or first joint inventor <b>Piers Christian Lingle</b>	Inventor's signature	Date
Residence and Post Office Address <b>11400 National Boulevard, No. 133; Los Angeles, California 90064</b>		Citizenship <b>U.S.</b>

Full name of second joint inventor <b>Craig Leonard Ogg</b>	Inventor's signature	Date
Residence and Post Office Address <b>4208 Boyar Avenue; Long Beach, California 90807</b>		Citizenship <b>U.S.</b>

**DECLARATION AND POWER OF ATTORNEY  
FOR PATENT APPLICATIONS**

**Docket No. 39476/RRT/S850**

Full name of third joint inventor <b>Girish Venkat</b>	Inventor's signature	Date
Residence and Post Office Address <b>10801 Rose Avenue, Apt. 10; Los Angeles, California 90034</b>		Citizenship <b>India</b>

Full name of fourth joint inventor <b>Richard Winslow</b>	Inventor's signature	Date
Residence and Post Office Address <b>4133 Jasmine Avenue; Culver City, California 90232</b>		Citizenship <b>U.S.</b>

Full name of fifth joint inventor <b>Keith Shoji Kiyohara</b>	Inventor's signature	Date
Residence and Post Office Address <b>1233 Sunset Avenue; Santa Monica, California 90405</b>		Citizenship <b>U.S.</b>

DSZ PAS253812.1.\*-6/1/00 8:01 AM